

Remembering Australian  
videogames of the 1980s: what  
museums can learn from retro  
gamer communities about the  
curation of game history

Helen Stuckey

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Department of Screen and Media  
School of Humanities and Creative Arts  
Faculty of Education, Humanities and Law  
Flinders University



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## Abstract

The importance of the work of retro gamers and fan communities within the field of videogame preservation has been acknowledged and the need for institutional collaboration with these communities has also been recognised. There are, however, minimal examples of how museums might realize this opportunity. This thesis examines the curation of a local history of Australian videogames for the era of the microcomputer and, in the process, provides an example of how museums can effectively engage with online communities to document and display videogames.

Local game histories form a crucial component of a response to the call for a critical historiography of videogames. Notable scholars to have proposed the need for such a historiography include Raiford Guins, Henry Lowood, Jakko Suominen and Melanie Swalwell. Responding to this need, I undertake research on an important chapter of Australian videogame history. In addressing the challenges of curating videogames, which are understood as both ‘artefacts and experiences’, I explore what museums can learn from the practices of retro game communities. Online retro gamer communities have created extensive archives of early microcomputer games, developing systems and procedures for their preservation and documentation. Through examination of retro gamer sites and other player made artefacts, I develop a novel argument for the importance of player memory in capturing how people experienced videogames and engaged with broader game culture. The importance of personal memories for videogame history is further explored in the case study of the Popular Memory Archive (PMA). The PMA website is designed as both exhibition and archive with the intent of engaging online communities in sharing their recollections of 1980s games. Through an analysis of the PMA I examine new ways of documenting and displaying born digital work.



This thesis contributes to broader questions about the display and collection of digital heritage by museums confronted with the challenges of a future in which screen culture will no longer leave material traces. Born digital artefacts need to be recorded and represented through the documentation of their systems and the experiences they afford their users. Through an analysis of retro gamer sites and the PMA, I present an exemplar for future collaborative practice between museums and online communities for the display and documentation of born digital artefacts.

## Declaration

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Helen Stuckey, August 2016

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This thesis draws on a selection of co-authored published works discussing the Play it Again project for which I was the principal author, these are:

- Stuckey, Helen, Melanie Swalwell, and Angela Ndalianis. “The Popular Memory Archive: Collecting and Exhibiting Player Culture from the 1980s.” In *Making the History of Computing Relevant: IFIP WG 9.7 International Conference, HC 2013*, edited by Arthur Tatnall, Tilly\ Blyth, and Roger Johnson, 215–225. London: IFIP Springer, 2013.)
- Stuckey, Helen, Melanie Swalwell, Angela Ndalianis, and Denise De Vries. “Remembrance of Games Past: The Popular Memory Archive.” In *The 9th Australasian Conference on Interactive Entertainment: Matters of Life and Death*, 1–7. Melbourne, 2013.
- Stuckey, Helen, and Melanie Swalwell. “Retro-Computing Community Sites and the Museum.” In *The Handbook of Digital Games*, edited by Mario C. Angelides and Harry Agius, 523–547. Hoboken: IEEE/Wiley, 2014.
- Stuckey, Helen, Melanie Swalwell, Angela Ndalianis, and Denise de Vries. “Remembering & Exhibiting Games Past: The Popular Memory Archive.” In *Proceedings of DiGRA 2014: What Is Game Studies in Australia?* Melbourne: DiGRA, 2015.  
<http://todigra.org/index.php/todigra/article/view/40>.
- Stuckey, Helen, Melanie Swalwell, Nick Richardson, and De Vries, Denise. “What Retrogamers Can Teach the Museum.” In *MWA2015: Museums and the Web Asia*. Melbourne, 2015.  
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Figure 1: Aussie Games (Beam Software, 1990)



## Chapter I

# Introduction

## I.1 Exhibiting Videogames

The exhibition of videogames reveals much about their complex nature. The display of early games offers the dual challenge of their technologies and their aesthetics<sup>1</sup>. Curators must address the question of how the significance and complexity of videogames can be communicated in the gallery. Videogames can be understood in a variety of ways. Videogames are objects of design. Videogames are also a performance medium and players are the co-authors of videogame experiences. The gameplay of a novice player communicates a very different artefact from the gameplay of an elite player. Elite players, through their knowledge and skill, take advantage of every glitch and bug in the game's design to reveal gameplay possibilities unforeseen by even the designers. Player actions can further extend experiences beyond the designed game through a variety of behaviours from hacking and modding to their interactions within the complex social ecologies of massive multiplayer online games. A game's associated diegetic 'experiences' can even extend beyond its screen world through the practices of cosplay<sup>2</sup> and fan fiction.<sup>3</sup> The question of exhibiting historical games is not simply one of access to playing them, but also understanding how they were played. Their display involves more than just access to executable software, it also strives to make sense of

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<sup>1</sup> Aesthetics is a notoriously slippery term within videogames research communities. The temptation is to conflate it with previously established areas of artistic endeavour such as graphics, audio and narrative. In their formal approach to understanding videogames, the MDA framework, Hunicke et al. define 'aesthetics' as "the desirable emotional responses evoked in the player, when she interacts with the game system". A concept of aesthetics that addresses the interaction of the player is essential for an understanding of videogames. This will be discussed further in chapter 3. Robin Hunicke, Marc LeBlanc and Robert Zubek, 'MDA: A Formal Approach to Game Design and Game Research' [2004] Workshop on Challenges in Game AI 1 <<http://www.cs.northwestern.edu/~hunicke/pubs/MDA.pdf>>.

<sup>2</sup> Cosplay or "costume play" is the act of dressing up and pretending to be fictional characters. It has both creative and social functions.

<sup>3</sup> This description focuses on videogames as entertainment and does not address the manner in which videogames are becoming more prominent in other areas such as advertising, health, education and art. As Ian Bogost suggests, you can do a lot things with videogames from pranks to philosophy to pornography. Ian Bogost, *How to Do Things with Videogames* (University of Minnesota Press 2011).

games' bigger place in culture, among media technologies, and within the creative design industries.

The exhibition of historical videogames and the ability for new audiences to engage with them will play an important part in their survival. The way early videogames are documented and displayed determines how they are understood now and in the future. In the last decade museums and archives have been increasingly active in videogame preservation. Major initiatives have launched internationally to address the challenges of videogames' survival as executable code and their assimilation into institutional collections. These include the European Federation of Game Archives, Museums and Preservation Projects (EFGAMP) and the United States Library of Congress affiliated Preserving Virtual Worlds projects. The exhibition of videogames has also been tackled by leading cultural institutions including New York's Museum of Modern Art; the Smithsonian American Art Museum (Washington); the Musée des Arts et Métiers (Paris); the Barbican (London) and the Australian Centre for the Moving Image (Melbourne). These diverse organisations each addressed the exhibition of videogames through their differing institutional agendas. In 2009, the US-based Strong National Museum of Play (Rochester), with its focus on the cultural significance of play, created its dedicated Center for the History of Electronic Games (ICHEG).<sup>4</sup> ICHEG features specialised collections, archives, lab and galleries for videogame research and display. There are now a number of independent museums devoted to videogames including the Berlin Computerspiele Museum (founded 1997), which re-

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<sup>4</sup> Originally the National Center. In 2013 it changed its name to the International Center for the History of Electronic Games (ICHEG) to better represents videogames' global impact.

opened its doors to visitors in 2011<sup>5</sup>, the Video Game Museum of Rome (Vigimus) 2012, and the National Videogame Arcade, Nottingham, 2015.<sup>6</sup> Whereas videogame collections rarely featured in cultural museums when this doctorate commenced, they are now becoming significantly more common.<sup>7</sup>

Before there was the slightest glimmer of institutional concern for videogame collection and display, fans and retro gamers had already identified the vulnerability of early videogames. For many years fans have pursued their pioneering efforts with software emulation and the documentation of games software, online. They have produced their archives relatively untrammelled by questions of legality. Free of existing institutional bureaucracy and operating beyond the established traditions of cultural heritage, some groups have developed exemplary practices and inventive systems for documenting the new medium. The activities of these early online retro videogame communities contribute to the transformation of collections and audiences in a digital age. They provide seminal examples of how online digital communities interacting with digital objects are reshaping understandings of access and preservation.

“Public space has shifted to the web”, states curator Anne-Marie Schleiner, allowing “audiences located geo-graphically distant” to partake in “narrowly focused, “geeky” niche micro-communities”. These communities are able to offer their participants “specialized knowledge

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<sup>5</sup> The Berlin Computerspiele Museum had a permanent exhibition in Berlin from 1997-2000. It then operated purely as an online museum touring a series of curated exhibitions before opening in a new permanent exhibition space in 2011.

<sup>6</sup> There are also private Museums created by collectors such as American Classic Arcade Museum, North Hampshire, US and The Nostalgia Box in Perth, Australia. America's National Videogame Museum is a private collection, amassed by the creators of the Classic Gaming Expo, housed within the Frisco Discovery Centre, Texas, US.

<sup>7</sup> Videogames have formed part of collections in computing and information technology as examples of software and as illustrative of the ability of computer games to showcase the performance of computers.

sharing and intense involvement”.<sup>8</sup> The internet has fostered new knowledge systems and the rise of vernacular knowledge. These new knowledge systems, from the techno-utopian visions of Pierre Levy’s collective intelligence to the populist embrace of Clay Shirky’s collective action and cognitive surplus, challenge the Museum’s historic status as an apparatus for expertise.<sup>9</sup> Museums, with their object-focused collections, are ill prepared for the demands of the digital age. They need to embrace both online audiences and the collection of born digital artefacts to adapt to a digital future. The need for a cultural shift is called for in the 2014 Australian Galleries, Libraries, Archives & Museums (GLAM) Innovation Study. Its key recommendations were “digital access to collections” and “richer collaborations with an informed online public”.<sup>10</sup> The study warns that, without an urgent collaborative approach to the preservation of born digital material, Australia is at risk of losing access to its digital heritage.

Leading voices on game preservation have emphasized the need for institutional solutions that are able to work with and accept contributions from community. These include a 2002 entreaty to fellow collections managers from Henry Lowood, the Curator for History of Science & Technology Collections, Film & Media at Stanford University Libraries, to start archiving games. In 2010, the ‘Preserving Virtual Worlds Report’ acknowledged the need to engage community. EFGAMP take pride in their roots and practices embedded in community projects recognition of the

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<sup>8</sup> Anne-Marie Schleiner, “Fluidities and Oppositions among Curators, Filter Feeders and Future Artists,” *Intelligent Agent* 3, no. 01 (2003) 3, <http://opensorcery.net/opposition.pdf>.

<sup>9</sup> Pierre Levy, *Collective Intelligence* (Perseus 1997); Clay Shirky, *Cognitive Surplus: How Technology Makes Consumers into Collaborators* (Penguin Books 2010); Clay Shirky, *Here Comes Everybody: The Power of Organizing without Organizations* (Penguin Books 2008).

<sup>10</sup> T Mansfield et al., *Innovation Study: Challenges and Opportunities for Australia’s Galleries, Libraries, Archives and Museums*, 2014, vi-vii, <http://www.csiro.au/Portals/Media/Australian-museums-risk-becoming-digital-dinosaurs.aspx>.

importance of these communities.<sup>11</sup> The recommendations for working with community go beyond recognition of the early software preservation work of these gamer communities to address the need to understand games as played, including their broader resonance within player communities.

Without players, videogames exist only as static computer code. How videogames come into being through play is still being deliberated within Games Studies. Videogames are defined by “their verbs”, explained pioneering games designer Chris Crawford in 1982.<sup>12</sup> They are about “actions”, states Alex Galloway, actions that occur both inside and outside the software’s diegetic world.<sup>13</sup> Videogames belong to a new digital era of design where works increasingly do not take a material form that can be simply exhibited or collected. We need to understand more about how to document and display historical videogames so as to retain a meaningful and lasting record of the medium’s history. I argue for the importance that the act of exhibiting historical games plays in this process.

Exhibition curation asks different questions than the archival and collection curation of historical games. Both exhibition and collection curation address the selection of the best material to be representative of a period and of work that is deemed significant. Exhibition starts with the questions of access and audiences – asking how to engage and communicate ideas, concepts and stories. In conjunction with a collection’s focus on questions of how to preserve videogames, curation of historical

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<sup>11</sup> Henry Lowood, ‘Shall We Play a Game: Thoughts on the Computer Game Archive of the Future’, *Bits of Culture conference, Stanford University* (2002) <[http://www.stanford.edu/~lowood/Texts/shall\\_game.pdf](http://www.stanford.edu/~lowood/Texts/shall_game.pdf)>; ‘EFCAMP Homepage’ (*EFCAMP*) <<http://www.efgamp.eu/>> accessed 12 August 2014; Jerome P McDonough and others, ‘Preserving Virtual Worlds Final Report’ (2010) <<https://www.ideals.illinois.edu/handle/2142/17097>>.

<sup>12</sup> Chris Crawford, *On Game Design* (New Riders 2003). Crawford’s seminal book on games design *The Art of Computer Game Design* was first published in 1984.

<sup>13</sup> Alexander R. Galloway, “Game Action Four Moments”, *Gaming: Essays on Algorithmic Culture*, Electronic (Minneapolis: University of Minnesota Press, 2006). 1-38

games for exhibition addresses their interpretation and provides opportunities to engage in a dialogue with audiences.

Until recently, discussion about game preservation has largely focused on the creation of archives with their assembling of records for future researchers and the technical challenges of preserving executable game software.<sup>14</sup> Discussion of exhibiting historical games had been neglected.<sup>15</sup> The exhibition of videogames and interest in game curation is now, however, a wider concern for both museum practice and games scholarship. The 2012 announcement of the New York Museum of Modern Art's (MoMA) acquisition of fourteen videogames for its design collection was one of the first that offered reflection on how the works would be both displayed and preserved in the context of the museum's overall collection policy.<sup>16</sup> The 2015 Game Developers Conference (GDC) in San Francisco featured a dedicated discussion on game conservation and exhibition.<sup>17</sup>

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<sup>14</sup> Lowood, 'Shall We Play a Game: Thoughts on the Computer Game Archive of the Future'; Henry Lowood, 'Playing History with Games: Steps towards Historical Archives of Computer Gaming' (2004) <<http://cool.conservation-us.org/coolaic/sg/emg/library/pdf/lowood/Lowood-EMG2004.pdf>>; Authors Devin Monnens and others, 'Before It's Too Late: A Digital Game Preservation White Paper' (2009); Megan A Winget and Caitlin Murray, 'Collecting and Preserving Videogames and Their Related Materials: A Review of Current Practice, Game-Related Archives and Research Projects', *Proceedings of the American Society for Information Science and Technology* (School of Information, University of Texas at Austin; 1 University Station, D7000, Austin, TX 2008); Joanna Barwick, James Dearnley and Adam Muir, 'Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation' (2011) 6 *Games and Culture* 373 <<http://gac.sagepub.com/cgi/doi/10.1177/1555412010391092>> accessed 18 April 2012; McDonough and others.

<sup>15</sup> Kristin Macdonough identifies the different agenda of MoMA to those organisations discussed in the 'Preserving Virtual Worlds Report', but she still focuses on documentation and collection of objects rather than exhibition and communication. Kristin MacDonough, 'Conserving Portal: Defining and Documenting the Object,' *Kinephanos: History of Games International Conference Proceedings* 5, no. 1 (2014), 75, [http://www.kinephanos.ca/Revue\\_files/2014-MacDonough.pdf](http://www.kinephanos.ca/Revue_files/2014-MacDonough.pdf).

<sup>16</sup> Paola Antonelli, 'Paola Antonelli: Why I Brought Pac-Man to MoMA' (*Ted Salon*, 2013) <[http://www.ted.com/talks/paola\\_antonelli\\_why\\_i\\_brought\\_pacman\\_to\\_moma.html](http://www.ted.com/talks/paola_antonelli_why_i_brought_pacman_to_moma.html)> accessed 18 August 2013; Paola Antonelli, 'Video Games: 14 in the Collection for Starters' (*Inside/Out A MoMA Blog*, 2012) <[http://www.moma.org/explore/inside\\_out/2012/11/29/video-games-14-in-the-collection-for-starters/](http://www.moma.org/explore/inside_out/2012/11/29/video-games-14-in-the-collection-for-starters/)> accessed 13 April 2013; MacDonough.

<sup>17</sup> Panel featured Jon-Paul Dyson, Director International Center for the History of Electronic Games, The Strong Museum; Keiran Long, Senior Curator of contemporary architecture and design and digital at the Victorian and Albert Museum, Henry Lowood, Curator for History and Science and Technology and Film & Media Collections, Stanford University, Melanie Swalwell, Flinders University & Chair William Huber, Lecturer, Abertay University, School of Art, Media and Games. <http://www.gdcvault.com/play/1022241/Saving-It-Showing-It-Collecting>

The panel featured scholars and curators of archives and museum collections who discussed the institutional collection of games, what institutions should collect, and how they might exhibit videogames. Questions about the place of videogames in the museum have been the basis of a series of international workshops organised by Abertay University (Dundee) and the Victorian & Albert Museum (London) in the lead up to the V&A's videogames exhibition planned for 2017. The workshops' aims were to address protocols for the interpretation and display of videogames as "artefacts, processes and affects".<sup>18</sup> In addition, media historian Raiford Guins has toured museums of North America to examine the existing displays of the remains of videogames material history, probing what happens to the stuff of videogames when its code no longer executes, when there are no more actions possible.<sup>19</sup> Guins' focus on how museums treat the material history of the videogame is in contrast to my concern with the more intangible history of videogames. My core concern is to capture the history of videogames that is not represented by objects. I explore how videogames were experienced and shared as cultural objects, their meaning within particular communities, and the many distinct and individual stories they generate. In the process, I address how museums could work with online communities to capture a diverse history of videogames.<sup>20</sup>

## I.2 Proposition & Aims

My aim in this project is to propose a strategy for the curation of Australia's videogame history of the 1980s in relation to two particular challenges;

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<sup>18</sup> <http://www.abertay.ac.uk/research/theme/creative/games/studies/>

<sup>19</sup> Raiford Guins, *Game After: A Cultural Study of Video Game Afterlife* (MIT Press 2014).

<sup>20</sup> "Museums" and "the Museum" is used to stand for heritage institutions collecting videogames.



- Firstly, that of the curation of a local history of Australian videogames for the era of the microcomputer; and
- Secondly, how museums can learn from and work with online retro gaming communities in documenting and displaying videogame history.

While the importance of the work of retro gamers and fan communities within videogame preservation has been acknowledged, and the need for collaboration been called for, there are few examples of how museums might realize this opportunity. This thesis addresses a gap in knowledge about Australia's early videogame history and, in doing so, provides an exemplar of how museums can effectively learn from and work with online communities to document and display videogames.

The scope of this research addresses the curation and exhibition of Australian videogames of the 1980s, examining the kinds of stories and material that need to be represented and collected. It addresses two key questions:

- How can the significance and complexity of videogames as experiences be documented and displayed?
- How can the practices of online retro gamer communities inform the curation and display of videogames?

I explore how the museum might utilize player-made artefacts, knowledge, and the practices of retro gamer communities to develop collections and exhibit historical games. I propose that engaging with those who lived through the history of the games, and the collection and display of popular memory can provide significant insights and enable meaningful engagement between institutional collections, retro gamer collections and audiences. The investigations of this thesis are resonant with broader questions about the digital future of museums. In addition to contributing to game preservation scholarship by proposing techniques that support the

contributions of the gamer community, I examine the potential for curating and exhibiting born-digital artefacts online. I explore how institutions can engage audiences online in ways that are meaningful to users and, by allowing them to contribute their knowledge to the collection, add layers of meaning to the collection. I use questions of access and audience engagement with historical games through exhibition to provide a different perspective on questions of preservation. I ask what kinds of materials are best able to communicate a videogame's dynamic and social nature. My research also addresses the role of local game collections as part of both national stories and the larger discourses of game history. The Popular Memory Archive (PMA), an online exhibition and archive, is used as a case study to explore and demonstrate some of these ideas. The Popular Memory Archive forms part of the Australian Research Council funded project *Play it Again: Creating a Playable History of Australasian Digital Games*, for Industry, Community and Research purposes.<sup>21</sup>

The thesis is situated where museums, curatorial practice, computer games and online communities intersect and it traverses disciplinary boundaries. I address the recent discourse around videogame preservation and draw upon the disciplines of Fan Studies, Game Studies, Media Studies, Sociology and Museology. Whereas institutions have been slow to recognise the importance of preserving early games, retro gamers and microcomputing fans have been busy archiving software and developing emulators to support continued access to these works. In addition, these fan communities have been sharing their memories of play and making

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<sup>21</sup> Play It Again is a game history and preservation project focused on locally written digital games in 1980s Australia and New Zealand. An Australian Research Project, it is collaboration between Flinders University and the University of Melbourne. Its partner organisations are the Australian Centre for the Moving Image (ACMI), the New Zealand Film Archive (NZFA), the Berlin Computerspiele Museum and Victoria University, Wellington. <http://playitagainproject.org/> and <https://www.flinders.edu.au/ehl/firth/focus/digitalhumanitiesandresearch/screen-and-media-digital-media-play-it-again.cfm>

digital copies of their personal collections of games and related ephemera available online. These expert hobbyist sites provide a valuable resource for game fans and game scholars alike. Some of these sites, for example the Hall of Light <http://hol.abime.net/> and the World of Spectrum <http://www.worldofspectrum.org/>) operate at a very professional level of data management and presentation. These sites currently occupy a space that the traditional museum is just beginning to address. Many of these fan sites are better designed and more technologically sophisticated than the budding online videogame resources of museums and institutional archives. The importance of fan and hobbyist groups to the preservation of videogames is widely acknowledged.<sup>22</sup> Fan archives, however, are themselves fragile digital artefacts susceptible to the vagaries of personal ambitions, group dynamics and server closures. It is not unknown for years of work to disappear overnight, leaving behind nothing but a 'code 404' error. An added complication is that most hobbyist sites operate in a grey area of the law, collecting, collating and sharing works whose copyright status can be very complex, thus posing a further vulnerability.

An institutional preservation solution is needed for the long-term security of 1980s videogames.<sup>23</sup> Most heritage institutions, however, do not currently have policies or practices capable of addressing videogames,

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<sup>22</sup> Lowood, 'Playing History with Games: Steps towards Historical Archives of Computer Gaming'; McDonough and others; Monnens and others; James Newman, *Best Before: Videogames, Supersession and Obsolescence* (Routledge 2012); Melanie Swalwell, 'Towards the Preservation of Local Computer Game Software: Challenges, Strategies, Reflections' (2009) 15 *Convergence: The International Journal of Research into New Media Technologies* 263 <<http://con.sagepub.com/cgi/content/abstract/15/3/263>> accessed 9 May 2012.

<sup>23</sup> Joanna Barwick, James Dearnley and Adrienne Muir, 'The Barriers to the Preservation of Digital Games: Questions on Cultural Significance', *DOCAM: Media in Motion Symposium The Challenge of Preservation in the Digital Age* (DOCAM and Media@McGill 2008) <<https://dspace.lboro.ac.uk/dspace-jspui/handle/2134/4988>> accessed 9 May 2012; Lowood, 'Playing History with Games: Steps towards Historical Archives of Computer Gaming'; McDonough and others; James Newman and Iain Simons, 'Make Videogames History: Game Preservation and The National Videogame Archive', *DiGRA: Breaking New Ground: Innovation in Games, Play, Practice and Theory* (2009) <<http://www.digra.org/dl/db/09287.32127.pdf>>; Swalwell, 'Towards the Preservation of Local Computer Game Software: Challenges, Strategies, Reflections'; Winget and Murray.

which, as complex digital artefacts, require a solution distinct from the traditional object-based approach to collecting. Museums' and archives' existing policies, structures and expertise are challenged by the need to preserve not just the software and hardware objects, but also access to the played game and understandings of the player cultures that surrounded it – what James Newman describes as “the-played-with-game”.<sup>24</sup> In addressing these challenges this research considers what lessons can be learnt from the work of these expert fan sites regarding the collection and exhibition of micro-computer games from the 1980s. Some of these fan sites are over twenty years old, have seen numerous iterations, and have grown with the development of the internet and the expanding opportunities for online participation.

There are only a few examples of institutional collections working directly to utilise fan knowledge and work with fan communities. Stanford University curator, Henry Lowood's pioneering work on machinima with the Internet Archive and the Archiving Virtual Worlds project are founding examples of an institution working directly with communities online.<sup>25</sup> There are also a number of online games and software repositories attached to institutions. For example; the [now defunct] Digital Games Archive which was established in 2002 by the Berlin Computerspiele Museum, and the Australasian Heritage Software Database at Flinders University that contains NZTronix, an online database of locally-written New Zealand software from the 1980s.<sup>26</sup> However, compared to the wealth of resources

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<sup>24</sup> James Newman, *Playing with Videogames* (Routledge 2008); James Newman, '(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay' (2011) 6 *International Journal of Digital Curation* 109 <<http://www.ijdc.net/index.php/ijdc/article/view/186>> accessed 18 April 2012.

<sup>25</sup> Henry Lowood, 'Memento Mundi: Are Virtual Worlds History', *iPRES 2009: the Sixth International Conference on Preservation of Digital Objects* (2009); Lowood, 'Video Capture: Machinima, Documentation, and the History of Virtual Worlds.'

<sup>26</sup> NZTronix, originally hosted by Victoria University Wellington, has been absorbed into the Australasian Heritage Software Database.

and persistent user activity that can be found on fan archivist sites such as The World of Spectrum and Lemon64,<sup>27</sup> these official repositories are dull and uneventful places. They have none of the richness of the living and expanding catalogues, or the lively online communities, of retro gamer destinations.<sup>28</sup>

### I.3 Motivation

Curatorial methods shape my research rationale and the structure of this thesis. My interest in the curation of videogames is informed by my background in media arts curation for interactive screen art works and the curation of design and architecture. Whereas interactive media arts share many of the technical challenges and issues of performance that videogames create for museums and audiences, architecture presents the challenges of complex design objects defined through their multiple relationships to users. In the gallery, architecture is rendered through a series of representations that struggle to convey the full breadth of meanings, approaches, functions and agencies that underpin its design, reception and existence as a set of temporal experiences. Whilst it is possible to present videogames as ‘things’ within the gallery, like architecture, videogames’ meanings are complex. Some understandings are located in specific narratives of science and technology; some concern their reception in local culture, while others are related to their existence in global markets. In addition, authorship is often blurred not just in their design and production, but also through the role users take in co-creating their meanings. The overall meaning and significance of videogames is defined through the practices and experiences of the individuals and communities who interact with them. It is the aggregate of individual

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<sup>27</sup> <http://www.lemon64.com>

<sup>28</sup> The Internet Archive’s more user-friendly makeover in 2015 may transform its user base from users who need to know what they are looking for to more casual browsers.

instances of gameplay and the social experiences that surround playing a game that constitute the 'game as played'.

Inquiry into how to document and display videogames' multiple meanings forms a key part of my thesis investigation. The proposition that significance and meaning of early videogames can be accessed through engagement with their communities of players is explored, in part through the Popular Memory Archive. The inspiration for the Popular Memory Archive lies with my experience exhibiting historical games in the gallery. In 2006 I curated the exhibition *Hits of the 1980s: Aussie Games that Rocked the World* for the Games Lab at the Australian Centre for the Moving Image (ACMI). The exhibition featured the games of Beam Software, Australia's first game development studio, and its parent company Melbourne House, Australia's pioneering game publishers. The focus of the ACMI exhibition was the revelation that Australia not only had a games industry in the 1980s, but that it was a very successful international one. Displayed in ACMI's Games Lab, the games of *Hits of the 80s* were predominantly emulated and played on contemporary computers. An example of a game on original hardware was included. Its presence, side-by-side with its emulated version, was more to draw attention to the act of emulation in the gallery than to offer an 'authentic' experience.

What was striking about the exhibition was how poorly the playable games in the gallery engaged audiences. Instead of a fascinating encounter with Australia's early game history, audiences encountered unfamiliar gameplay and outdated technology. Playing the games revealed little about the experiences and qualities that had made these games historically important. It was apparent that, whilst the display of playable early games was a technical achievement and unusual experience in the gallery, the 1980s games experienced through hands-on gameplay struggled to

communicate to contemporary audiences what made them historically significant.

A second inspiration for this thesis came in 2006 with a visit to ACMI by Andreas Lange, director of the Berlin Computerspiele Museum. Lange's lecture was a wakeup call regarding the vulnerability of videogames as software artefacts, provoking my recognition that the newest form of screen art was already at risk.

In 2008 I proposed to ACMI the creation of an online demotic<sup>29</sup> memory archive to document the games of Beam Software. It was an acknowledgement of an institutional need to collect Australia's early videogame history. It was inspired by the curatorial efforts and vitality of the retro game sites that had formed key resources for the exhibition *Hits of the 80s*. The aims of the demotic memory archive were to recognise the importance of Beam Software and Melbourne House to the story of Australian screen culture, and to reach out to the community who had played their way through this history to collect their memories. These ideas are captured in the proposal, "Discussion Paper for the creation of a dedicated site for the Archiving and Preserving of the Early Videogames Games of Australian Game Designers Beam Software 1982 – 1987", I wrote for ACMI's Head of Collections, Gael McIndoe, in 2008. It explained how traditional museum style content was to be complemented with an opportunity for users to contribute to a social history of playing the games. In this document I stated how, "A focus on community engagement

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<sup>29</sup> Demos – of the people

recognises and builds upon the fact that the authorship of the history of videogames is currently held by the fans and not by the institutions".<sup>30</sup>

The Discussion Paper argued explicitly for the creation of a popular memory archive that could take contributions online from those who had played Beam Software's games of the 1980s. In a section entitled 'Player Experience (creating a Popular Memory Archive)', it further outlined the ambitions of collecting player memories:

This project addresses the belief that to adequately archive videogames it is necessary to create repositories that are focused on more than simply conserving physical objects [or software] but also explore ways to document and record the social and personal experiences of players, including their capacity to alter the designed object... The player stories would create new spaces for audience interaction whilst presenting information that is valuable to building the museum's understanding and the broader cultural worth of its collection... In addition the archive would seek to record examples of player created artefacts such as game walk-throughs, player maps and illustrations inspired by the original work.

The Popular Memory Archive will both create an invaluable resource that documents the games as understood through experience and it will work to change the traditional relationship of audiences to the museum. Through their

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<sup>30</sup> Helen Stuckey, 'Discussion Paper for the Creation of a Dedicated Site for the Archiving and Preserving of the Early Videogames Games of Australian Game Designers Beam Software 1982 – 1987' (2008). 15.



contribution users are asked to participate in the act of 'meaning making' within the museum.<sup>31</sup>

Concepts presented in my discussion paper for ACMI regarding the possibilities of online exhibition and the potential of popular memory to document historical videogames have informed and inspired this thesis research.

In the thesis I use the terms 'museums' and 'the museum' to denote heritage institutions engaged in the collection of videogames. I recognise that the context and collection criteria of individual organisations vary greatly, that the Museum of Modern Art (New York) and the Computer History Museum (Mountain View) have distinct appreciations and approaches to their collections and display of videogames. The purpose and agenda of individual museums critically inform their treatment of videogames. My work with ACMI, a centre for screen culture focused on access and audience, critically informed my curatorial thinking for this thesis project.

### I.4 Scope of Study

#### I.4.1 Fan Studies and Web 2.0

The productivity of fan communities is widely recognised and examined within Media and Cultural Studies.<sup>32</sup> Henry Jenkins' identification of 'prosumers', who use digital technology to "archive, annotate, appropriate

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<sup>31</sup> Ibid.

<sup>32</sup> Nancy Baym, *Tune In, Log On: Soaps, Fandom, and Online Community* (SAGE 1999); Nancy Baym and R Burnett, 'Amateur Experts: International Fan Labour in Swedish Independent Music' (2009) 12 *International Journal of Cultural Studies* 433; Nancy Baym, *Personal Connections in the Digital Age* (Polity 2010); Kari Kraus and Rachel Donahue, "Do You Want to Save Your Progress?": The Role of Professional and Player Communities in Preserving Virtual Worlds Risks to Videogame Longevity' (2012) 6 *DHQ : Digital Humanities Quarterly* 1 <<http://www.digitalhumanities.org/dhq/vol/6/2/000129/000129.html>> accessed 7 November 2012; Henry Jenkins, *Convergence Culture: Where Old and New Media Collide* (New York University Press 2006); Henry Jenkins, *Fans, Bloggers, and Gamers: Exploring Participatory Culture* (New York University Press 2006).

and recirculate media content",<sup>33</sup> can readily be seen in the practices of retro gamers who use the digital realm to collectively build resources and share their knowledge, creations and experiences. Fan Studies' focus on how technology supports new participatory relationships with existing media content shares much with the discourses of Web 2.0 and the transformative potential it offers institutions.<sup>34</sup> Jenkins suggests that fandom now represents a space of experimental prototyping, a testing ground for the clever and inventive ways media and culture industries are going to operate in the future.<sup>35</sup> My research engages with the possibilities that the practices of retro game fans offer for the remediation of the museum.

Digital technologies are transforming museums; new technologies expand the possibilities of collection management, exhibitions utilise new media to offer engaging and interactive displays, and collections include the born digital as well as material objects. In the networked era, audiences and the 'space' of the Museum are no longer confined within its architecture but also operate online. There is a wealth of material investigating and dissecting the remediation of museums in the digital era that ranges from discourse on the theoretical implications to guides on best practice.<sup>36</sup> This thesis does not attempt to tackle this tsunami of critical

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<sup>33</sup> Ibid.

<sup>34</sup> Henry Jenkins, 'The Future of Fandom' in Jonathan Gray, Cornel Sandvoss and C Harrington (eds), *Fandom: Identities and Communities in a Mediated world* (NYU Press 2007); Paul Booth, *Digital Fandom: New Media Studies* (Peter Lang 2010). 357-364

<sup>35</sup> Jenkins, 'The Future of Fandom.' 357-358

<sup>36</sup> Ross Parry, "Digital Heritage and the Rise of Theory in Museum Computing" (2005) 20 *Museum Management and Curatorship* 333 <<http://www.tandfonline.com/doi/abs/10.1080/09647770500802004>> accessed May 08, 2014; Ross Parry, *Recoding the Museum: Digital Heritage and the Technologies of Change* (Routledge 2007); Ross Parry (ed), *Museums in a Digital Age* (Routledge 2010); Claire McClland, "Collections Council of Australia Ltd Summit on Digital Collections : Working Papers," vol 61 (2006); Nancy Proctor, "Digital: Museum as Platform, Curator as Champion, in the Age of Social Media" (2010) 53 *Curator: The Museum Journal* 35; Rachel Tibbo, Helen; Hank, Carolyn; Lee Christopher; Clemens (ed), "DigCCurr 2009 Digital Curation, Practice, Promise & Prospects," *Digital Curation, Practice, Promise & Prospects* (University of North Carolina at Chapel Hill 2009); Christiane Paul, "Challenges to the Ubiquitous Museum: Presenting and Preserving New Media" (*NEME*, 2007) <[>](http://www.neme.org/main/571/preserving-new-media); S Keene, "The Future of the

inquiry. I seek only to address those areas resonant with the key questions: How can museums effectively document and display the significance and complexity of videogames that comes into being through the relation between players and the designed object? And what can museums learn from, and how can they work with, online communities in documenting and displaying game history?

#### 1.4.2 Micro Computing: Videogames of the 1980s

'Videogames' is the preferred industry and scholarly term to describe electronic games made for a range of platforms, be they computer, console, IOS, oculus rift, arcade or any other.<sup>37</sup> The scope of this study is limited to videogames for home computing. These became popular with the arrival of affordable microcomputers in the 1980s. My research does not address itself to home consoles, which dominate the prevailing North American and Japanese accounts of this era. This decision reflects the popularity of microcomputers over consoles during the '80s in Australia and the evidence that Australia was not engaged in developing games for consoles or arcade machines at this time. Consoles such as the Colecovision and the Atari 2600 were popular in Australia and localized generic PAL clones of home consoles machines were even created especially for the Australian market (predominantly in Hong Kong). However, these early home consoles and their consumption do not appear to directly inform the story of the emergence of games development as a creative industry in Australia.<sup>38</sup>

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Museum in the Digital Age." (*ICOM News*, 2004) 2004 <<http://discovery.ucl.ac.uk/35675/>> accessed January 10, 2014; Conservatoire National des Arts et Metiers, "Towards a Museum of Computing and Digital Society in France?" (*Le CNAM*, 2012) <<http://the.cnam.eu/culture-and-knowledge/towards-a-museum-of-computing-and-digital-society-in-france--486990.kjsp>>.vii.

<sup>37</sup> Whilst I use the compound word 'videogames', others prefer 'video games'.

<sup>38</sup> The Nintendo story of the late 1980s is one that Australia does play a part in. It is discussed in chapter 3 as part of the history of Melbourne House and Beam Software.

There is a significant difference between home consoles and home computers from a user engagement perspective. The games of early home consoles were designed to plug-and-play, whereas microcomputer gamers were required to have at least a basic<sup>39</sup> understanding of the computer to get their games running. This knowledge stimulated the development of a more intimate relationship to microcomputer game software and hardware. Before home consoles and the advent of microcomputers, arcade machines had arrived as a form of entertainment in the 1970s. The gameplay of the arcades deeply informed the videogames created for both home consoles and microcomputers as players aspired to bring the pleasures of the arcades home. During the early and mid-1980s arcade machines, with their dedicated purpose, could offer more polished games than those of home computing. They were viewed, by most gamers, as a distinct species compared to the games accessible at home.<sup>40</sup> Games for home systems were no longer governed by the arcades' demands for gameplay built on 'buying time' and evolved new forms of gameplay, goals and pacing.

Whilst most console games remained closer to the arcade style, games for home computers were also informed by the games created in science labs on powerful mainframe computers. Unlike the opaque nature of arcade games and home consoles, these games were co-authored as new users 'hacked' and 'bummed'<sup>41</sup> the code to improve and alter it. Computer games developed in university and science labs on more powerful computers had not only a different pace and style of play to the arcades, but many assumed a level of interest in how the code worked as intrinsic to their

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<sup>39</sup> Pun intended

<sup>40</sup> This is a concept expressed by a number of interviewees including Veronika Megler and John Passfield.

<sup>41</sup> 'Bumming code' is the act of rewriting it to be more elegant and concise, originally the opposite of hacking, which was to write crude code that got the job done. 'Hack' was later adopted to also mean working outside the norm. The use of the term 'Hacker' no longer implies crudely written code.

appeal.<sup>42</sup> Games begat in the computer science labs offered not just the pleasure of gameplay, but also spoke to the pleasure of making games, a pleasure intimately linked to mastery of the hardware and its systems. The pleasures commonly associated with the early microcomputers are those of knowing and exploiting the possibilities of systems hardware, of hacking, and of making and sharing code. This research focuses on Australian games for microcomputers but recognizes the variety of influences from arcades, labs and home consoles.

#### 1.4.4 Technical and Legal Issues of Preservation

Practical issues impact on the exhibition of videogames. It is these practical contingencies to curating that Terry Smith sees as demarcating the work of the curator from the speculative bent of the theorist or the historian's commitment to arm's length research.<sup>43</sup> Exhibition making operates within constraints and curators must always deal with factors beyond their control. Access to resources, budgets and spaces, and other factors such as institutional priorities, the availability of work, and permissions all govern curatorial meaning making. Technical and legal issues shape the preservation of historical videogames and their exhibition. Copyright and technical preservation challenges, whilst informing how games can be exhibited, are not the focus of my research. As Smith suggests, these are among the many practical constraints that govern

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<sup>42</sup> Text adventures and 'Lunar Lander' are two examples of games from the labs whose pace and challenges were built around problem solving rather than twitch. The original Lunar Landers required the player to do calculations to land the craft. Benj Edwards, 'Forty Years of Lunar Lander: One Giant Step for GameKind' (*Technologizer*, 2009) <<http://technologizer.com/2009/07/19/lunar-lander/>> accessed 19 July 2013; Dennis G Jerz, 'Somewhere Nearby Is Colossal Cave: Examining Will Crowther's Original "Adventure" in Code and in Kentucky' (2007) 1 DHQ: Digital Humanities Quarterly 1; Henry Lowood, 'Videogames in Computer Space: The Complex History of Pong' (2009) 31 IEEE Annals of the History of Computing 5 <<http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=5223982>>.

<sup>43</sup> Terry Smith, *Thinking Contemporary Curating* (Independent Curators International 2012). 36.

curatorial practice; they inform the discussion but are not themselves the subject.<sup>44</sup>

#### 1.4.5 Nostalgia

This thesis does not wrestle with the anxieties about nostalgia that are so often expressed around Fan Studies. Instead, I consider nostalgia as a motivating and unifying force for the highly productive members of retro games community. What is noteworthy is how retro gamers consistently articulate a longing for a time when the user could claim mastery not just of gameplay, but also of the hardware systems themselves. The loyalty that these early platforms inspire is often built around an intimate knowledge of their workings. Players who were knowledgeable about their micros were likely also more aware of the achievements of a game's design. Many users were both gamers and home coders, equally fascinated with the potential of the systems as the pleasures of play. Such expert understandings of the micro platforms and knowing respect for the platform's games are recaptured in their fan sites. Christina Lindsay highlights how retro gamers for the TRS-80 distinguish themselves by the skills they developed by virtue of the necessity to 'do more with less' and their resultant ability to hack the old hardware to push it beyond its stated capacity.<sup>45</sup> She locates nostalgia in an explicit and personal link from the past to the present, forged in the hobbyist pleasures of tinkering and the recapturing of a social economy of their expert knowledge in retro games communities online. Links between the past and present of computing cultures are maintained through retro gaming communities and their associated hobbyist identities.

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<sup>44</sup> The Play it Again Project is fully engaged with these issues with dedicated technical and legal teams and their guidelines have had an impact this thesis, shaping the curatorial decisions for the PMA and informing the discussion.

<sup>45</sup> Christina Lindsay, 'From the Shadows: Users as Designers, Producers, Marketers, Distributors and Technical Support' in Nelly Oudshoorn and Trevor Pinch (eds), *How users matter: the co-construction of users and technologies* (MIT Press 2005).

Lindsay identifies how the fascination of retro gamers with the games and hardware of past eras is sustained through the possibilities offered by contemporary technologies such as the internet, social media and emulation. Her reading of how the hobbyist activities of retro gamers project both forward and backward, resonates with Maria Garda's position that retro gaming nostalgia navigates between the restorative and the reflective.<sup>46</sup> Garda compares how the restorative desire to authentically recall the past operates alongside the more personal and celebratory doctrines of reflective nostalgia. Whilst restorative desire (looking backward) is locked in a struggle to ward off the failure of old technology, reflective nostalgia (looking forward) mines the past for creative inspiration, bringing forth new work that examines and appraises the graphics, audio and gameplay achieved through mastering early game systems.<sup>47</sup>

#### 1.4.6 Importance of Personal Memory in Personal Computing

The History of Technology is, inevitably, focused on a history of material technological development. Its researchers have often found little to interest them in the details of the interaction of people with technology. This has led to an imbalance that threatens to erase the human dimension. Some researchers are challenging this stance. Any understanding of the impact of personal computing necessitates a history that addresses what users actually did with computers: Their reasons for having them; the software they used; the software they wrote; the communities that were formed around home computing. Computer historian Patricia Galloway highlights the need to document multiple memories of 'ordinary' users of personal computers. She states:

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<sup>46</sup> Maria B Garda, 'Nostalgia in Retro Game Design', *DiGRA 2013: DeFragging Game Studies*. (2013).

<sup>47</sup> Ibid.

Given that the emergence of the personal computer changes significantly the number and backgrounds of active participants in computer history—all of them creating born-digital content—and that this category is fast becoming synonymous with most content, I think historians need to pay much more attention to the details of reception, modification, and use of personal computers and software. For this purpose, we need to develop microhistorical resources to take full account of the network of people, documents, machines, and programs.<sup>48</sup>

My research addresses the importance of personal memories of 1980s microcomputing games in examining a history that is user-centric and poorly documented. I propose that personal memories provide understandings of these early games that cannot be attained from other sources. In addition, I suggest that that knowledge which Galloway identifies as vital for the ambitions of computing history and preservation, including the tacit knowledge of fixes, work-arounds and other kinds of user modifications, is a form of knowledge that is kept alive in retro game communities. These communities keep their memories alive in their ongoing engagement with the hardware and its emulation, and their work with games' software. It is the simplicity of Galloway's call to document the users' recollections of engagement with technology that governs my approach to the potential of demotic memory archives rather than the contested spaces of memory studies.

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<sup>48</sup> Patricia Galloway, 'Personal Computers, Microhistory, and Shared Authority: Documenting the Inventor-Early Adopter Dialectic' (2011) 33 *IEEE Annals of the History of Computing* 60 <<http://www.computer.org/portal/web/csdl/doi/10.1109/MAHC.2011.45>>.



## I.5 Curation as a Tool for Investigation

### I.5.1 Les Immatériaux

Exhibitions are more than simple displays and neutral configurations of objects. Intersecting with technical innovations, discursive shifts and larger kinds of philosophical investigations, they can help change ideas.<sup>49</sup> The 1985 exhibition *Les Immatériaux* was one of the earliest exhibitions to anticipate the digital future. Curated by French philosopher Jean-François Lyotard for the Centre Georges Pompidou, it investigated the shift from material objects to immaterial information technologies. A decade before the arrival of the world-wide-web, the exhibition presents a curious spatial mapping of the hypertextual potential of the digital. Lyotard explains that for the installation he wanted to avoid “squarely defining things”, wishing to fashion “a more fluid and immaterial system for the organization of space.”<sup>50</sup> His design featured multiple pathways that crisscrossed, allowing visitors to map their own individualistic paths through the exhibition. Their navigation was enriched by the use of a Walkman, which provided a personal audio feed of fragments of information indirectly related to the displays offering divergent and non-linear interpretations. Dioramas combined art with everyday objects, technological devices and instruments of science - a now familiar deconstructive tactic to provoke visitors to question the systems of value and power that define such separate categories.<sup>51</sup>

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<sup>49</sup> John Rajchman, 'Les Immatériaux or How to Construct the History of Exhibitions' [2009] Tate Papers 1.

<sup>50</sup> B Blistène, 'Les Immatériaux: A Conversation with Jean-François Lyotard' (1985) 121 Flash Art  
<<http://www.kether.com/words/lyotard/LYOTARD-withBlistene-LesImmatériaux-FlashArt-March1985.pdf>>.

<sup>51</sup> Fosco Lucarelli, 'Les Immatériaux (an Exhibition by Jean François Lyotard at the Centre Pompidou, 1985)' (SOCKS, 2014) <<http://socks-studio.com/2014/07/16/les-immatériaux-an-exhibition-of-jean-francois-lyotard-at-the-centre-pompidou-1985/>> accessed 11 November 2014; Rajchman; T Murray, 'Immaterial Archives: New Media and the Memory of Representation' [2000] Sites 277  
<<http://www.tandfonline.com/doi/abs/10.1080/10260210008456033>>.

Lyotard's exhibition used spatial metaphors to explore the possibilities of dynamic hypertextual relationships that are now instrumental to digital curation. Previous understandings about how institutions used their collections to communicate, and communicated their collections, are being challenged in the digital era by the potential of hypertextual relationships and the fluidity of the online environment. In addressing videogames' complex natures, I ask 'what opportunities does the online database create for interpretation and more inclusive interpretative practises?' *Les Immatériaux* probed how the act of display could enable multiple interpretations, envisaging alternative systems of exhibition that could transform linear display and spatial narrative. In a similar approach, this thesis adopts a curatorial lens to address the proposition that the complex meanings of videogames as experiences may be addressed more effectively by the systems available to online exhibition.

"Curator" traditionally defines the role of the keeper of collections. The collections curator is responsible for the care of a collection and its cataloguing. The collections curator oversees collection criteria, researches objects in their collections and curates exhibitions to share that knowledge with the public.<sup>52</sup> It is the process of exhibition curation, the act of knowledge sharing, that I engage as a critical tool for this thesis.

Exhibition curation is no longer associated directly with the care of collections. In my research I propose the act of exhibition curation may help define criteria for the creation of a collection of 1980s Australian videogames. I argue that the demands of exhibition provide a means of inquiry into what to collect to make these works meaningful to audiences.

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<sup>52</sup> Adrian George, *The Curator's Handbook* (Thames and Hudson 2015).2.

Defining the role of the exhibition in contemporary curating Terry Smith explains:

The exhibition ... works, above all, to shape its spectator's experience and take visitors through a journey of understanding that unfolds as a guided yet open-weave pattern of affective insights, each triggered by looking, that accumulates until the viewer has understandings of the curator's insight and hopefully, arrived at insights previously unthought by both.<sup>53</sup>

### I.6 Research Design

Curation is adopted here as a method of inquiry. Curation as a method of inquiry now forms the basis of a number of established international PhD programs.<sup>54</sup> Videogame curation is a relatively recent discipline and, despite the work of curators such as Isabelle Avers, Erich Berger, Conrad Bodman, Rebecca Cannon, Daphne Dragona, Carl Goodman, Henry Lowood, Celia Pearce, Rochelle Slovin, Shiralee Saul and Anne-Marie Schleiner, and the investigative works by artists such as Eddo Stern, Cory Archangel, Igloo (Ruth Gibson and Bruno Martelli), Julian Oliver and Joseph deLappe, is not well documented. I believe that the critical methods involved in videogame curation can contribute to and advance knowledge and understanding of game preservation and collection by the museum.<sup>55</sup> I have taken a blended approach to investigation that includes literature and project reviews, oral history, archival research, the analysis of selected retro gamer sites, and processes of curating videogames.

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<sup>53</sup> Smith, *Thinking Contemporary Curating*. 35.

<sup>54</sup> Specialist curatorial PhDs are offered in programs at Goldsmiths, London; University of Reading; Zurich University of the Arts and Monash University, Melbourne.

<sup>55</sup> A relevant example is Jon Ippolito's *Seeing Double Exhibition* (2006) at the Solomon R. Guggenheim Museum New York that presented a very interesting exploration of emulation.

The thesis contains four parts. Chapter 2 undertakes a survey of literature, situating the research within the context of videogame preservation and the emerging discourses of videogame historiography. Addressing Australia's early game history, Chapters 3 & 4 present case studies of two 1980s game developers. The thesis structure is modelled on my process of curation and these chapters represent a key research phase used to determine the scope of material. The following section on player made resources (Chapters 5 & 6), discusses the challenges of displaying historic videogames and examines the practices of selected online retro games archives. I use studies of a particular game, *The Hobbit*, and the analysis of representative retro games sites to discuss resources and techniques for display. The fourth section discusses the Popular Memory Archive as an online exhibition to collect and display the memories of those who lived and played their way through the era of 1980s microcomputing. I discuss activity on the Popular Memory Archive and offer some evaluation of the significance of the online contributions.

#### 1.6.1 Literature Review

In Chapter 2 I demonstrate the lack of historical research into early Australian games development. Reflecting on the literatures of game preservation, I propose that the collection and exhibition of videogames can be advanced through the examination of the online practices developed by retro games communities. I position my research in response to the recognition of the need to develop practices that enable contributions from players.

#### 1.6.2 Historiography

There is little existing research into the history of 1980s Australian games. Australia is a nation whose history sits on the edge of the story of the emergence of electronic gaming – a predominantly North American and Japanese story. In his history of Australian games development, Sam

Hinton notes that what is most remarkable about the Australian industry is that it exists at all.<sup>56</sup> Melanie Swalwell, in her 2012 study on the use of microcomputers in Australia in the 1980s, defines early microcomputers as a technology in search of a use – and identifies that use as “games”. Whilst there are few sources documenting Australian game history of the 1980s, there are a growing number of historico-cultural studies of local games histories of the 1980s. These include work on Finland, the former Czechoslovakia and New Zealand.<sup>57</sup>

In Chapters 3 & 4, I present research into Australia’s early game development period. In Chapter 3, I examine the history of the development studio Beam Software and their parent company, publisher Melbourne House. I document the process of researching local videogame development history when no formal industry archives exist. In drawing together this history, the discussion examines the value of fan-created archives as resources for scholarship. I ask: What is left out of game history because of the paucity of resources, the reliance on fan histories, and the hit driven culture and credo of supersession? I examine Melbourne House’s origins in ‘art house’ book publishing as presenting an alternative narrative to game history’s focus on technological innovation. In addition, I discuss some of the factors that affected that company over the decade that saw its shift from cottage industry to global business. Questions posed in Chapter

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<sup>56</sup> Sam Hinton, ‘Gaming Nation: The Australian Game Development Industry’ in Larissa Hjorth and Dean Chan (eds), *Gaming Cultures and Place in the Asia-Pacific region* (Routledge 2009).

<sup>57</sup> Petri Saarikoski, ‘Club Activity in the Early Phases of Microcomputing in Finland’, *History of Nordic Computing* (Springer 2003); Jaakko Suominen, ‘Game Reviews as Tools in the Construction of Game Historical Awareness in Finland, 1984 – 2010: Case MikroBitti Magazine’, *DiGRA 2011 Conference: Think Design Play*. © (2011); Jaroslav Svelch, ‘Indiana Jones Fights the Communist Police: Text Adventures as a Transitional Media Form in the 1980s Czechoslovakia’, *Media in Transition* 7 (MIT 2011); Melanie Swalwell, ‘Cast-Offs from the Golden Age’ (2006) 3 *Vectors: Journal of culture and technology in a dynamic vernacular* <<http://vectorsjournal.org/projects/index.php?project=66>>; Melanie Swalwell and Michael Davidson, ‘Game History and the Case of “Malzak”: Theorizing the Manufacture of “local Product” in 1980s New Zealand’ in Germaine Halegou and Benjamin Aslinger Benjamin Aslinger (eds), *Locating Emerging Media* (Routledge 2015); Melanie Swalwell, ‘1980s Home Coding: The Art of Amateur Coding’ in Stella Brennan and Su Ballard (eds), *The Aotearoa Digital Arts Reader* (Aotearoa Digital Arts & Cloud 2008).

3 on writing the history of Beam Software/Melbourne House represent what Jaakko Souminen describes as an emancipatory form of history, a contextual history that reads against the master narrative.<sup>58</sup>

The chapter draws extensively on oral history interviews with developers. The initial set of video interviews with Melbourne House founder Alfred Milgrom, designers and programmers Gregg Barnett, Bill McIntosh and Trevor Nuridin and Andrew Bailey and email interviews with Andrew Davis and Veronika Megler were conducted as part of the research for *Hits of the 80s* at ACMI in 2006 by myself as the Games Lab curator, and Games Lab Co-ordinator, historian Noe Harsel. Further interviews with Alfred Milgrom, Gregg Barnett, Veronika Megler and composer Neil Brennan were conducted by me for this research under the auspices of the Play it Again project.<sup>59</sup> Related interviews of 1980s developers that inform this research were also conducted for the Play it Again project with designers Darryl Reynolds, Dorothy Millard, John de Margheriti, John Passfield, Ross Symons and Steve Fawkner, Matthew Hall and Paul Holland. Copies of these interviews and their transcripts, including copies of the 2006 ACMI interviews, are held at Flinders University Department of Screen and Media. Additional resources include an email interview of questions and answers provided by Alfred Milgrom regarding the story of Melbourne House. Information on Mastertronic, including sales data, was provided by Anthony Guter via email correspondence. In addition, Veronika Megler's correspondence with James Maher was provided by James Maher with the permission of Veronika Megler.

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<sup>58</sup> Jaakko Souminen, 'How to Present the History of Digital Games', *Critical Evaluation of Game Studies seminar, University of Tampere* (2014).

<sup>59</sup> The original ACMI interviews were conducted by Noe Harsel and Helen Stuckey in 2006 for *Hits of the 80s* exhibition research. The later suite of interviews was conducted by H Stuckey, and H Stuckey and M Swalwell.

Chapter 3 concentrates on the history of development studio Beam Software, while Chapter 4 reflects on the reception of early games. Strategy game designers, Strategic Studies Group (SSG), afford a case study in the relationship that they cultivated with their audience of dedicated wargamers through their print magazine *Run5* (1986-1996). This chapter draws on analysis of *Run5* and associated archival material in conjunction with oral history interviews recorded with developers Roger Keating and Gregor Whiley.<sup>60</sup> It examines how the magazine not only played a vital role in allowing SSG to communicate directly with their audience, but also reciprocally gave their audience a voice. *Run5* offers a record not just of the company but also an account of the player community of this era. Examining the relationship that *Run5* created with its community, I consider how this activity relates to recent discussion on computer games and participatory culture,<sup>61</sup> reflecting on Swalwell's observation that accounts of user productivity in the era of the microcomputer have largely been overlooked in games theory.<sup>62</sup> SSG's innovative game systems on the computer allowed for users to design their own scenarios, replicating an important feature of traditional hex-based wargaming. The analysis of

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<sup>60</sup> Copies of these interviews and their transcripts are held at Flinders University Department of Screen and Media.

<sup>61</sup> Henry Jenkins, *Fans, Bloggers, and Gamers: Exploring Participatory Culture* (New York University Press 2006); John Banks, "Negotiating Participatory Culture in the New Media Environment: Auran and the Trainz Online Community – An (Im)possible Relation" [2003] MelbourneDAC Proceedings <<http://hypertext.rmit.edu.au/dac/papers/Banks.pdf>>; John Banks, "Opening the Production Pipeline: Unruly Creators", *DiGRA 2005 Conference Changing Views Worlds in Play* (2005) <<http://www.digra.org/dl/db/06276.19386.pdf>>; Olli Sotamaa, "Computer Game Modding, Intermediality and Participatory Culture" [2003] *New Media 1*; Olli Sotamaa, "When the Game Is Not Enough: Motivations and Practices Among Computer Game Modding Culture" (2010) 5 *Games and Culture* 239 <<http://gac.sagepub.com/cgi/doi/10.1177/1555412009359765>> accessed August 31, 2014; Olli Sotamaa, "On Modder Labour, Commodification of Play, and Mod Competitions" (*First Monday*, 2007) 1 <<http://firstmonday.org/ojs/index.php/fm/article/viewArticle/2006/1881>> accessed September 17, 2014; Hector Postigo, "Modding to the Big Leagues: Exploring the Space between Modder and the Game Industry" (2010) 15 *First Monday* 1 <<http://firstmonday.org/ojs/index.php/fm/article/view/2972/2530>>; Walt Scacchi, "Mods, Modders, Modding, and the Mod Scene" (2014) 15 *First Monday* 1 <<http://firstmonday.org/ojs/index.php/fm/article/view/2965/2526>>.

<sup>62</sup> Melanie Swalwell, 'The Early Micro User: Games Writing, Hardware Hacking, and the Will to Mod', *Proceedings of DiGRA Nordic 2012 Conference: Local and Global – Games in Culture and Society*. (DiGRA 2012) <<http://www.digra.org/dl/db/12168.37411.pdf>>.

*Run5* offers a historical understanding of how SSG assisted its audience to negotiate the shift from manual wargaming to computer.

### 1.6.3 Retro gamers

Chapters 5 & 6 interrogate the challenges of displaying historic videogames. They examine the types of resources that document historical games. I focus on the materials that are being produced and shared online by retro gamers to explore how both player-made objects and retro gamer community practices may support the curator in documenting and displaying historical games. In his examination of retro game sites, Suominen recognises that the internet's "websites, discussion forums, social media services, online auction forums, image and video sharing sites, and software archives" support a plethora of individual as well social and collective recollections of different sorts of gaming cultures, practices and artefacts.<sup>63</sup> He proposes that online retro gamer communities produce three kinds of discourse: historical, heritage and retrospective. Historical discourses are those of the grand chronological narrative of digital gaming (milestones and turning points), whilst heritage discourses address the importance of preserving game cultural objects, representing them, and providing opportunities to re-use them. 'Retrospective' is a term he uses to describe the personal recollections of players, the short comments and reminiscences that permeate the forums and message boards of retro game sites.<sup>64</sup> In surveying the contribution of retro gamers and considering what could be valuable to the curator, I consider all three of Suominen's types of discourse with a particular focus on the value of retrospective discourses – the individual reflections on specific games experiences.

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<sup>63</sup> Jaakko Suominen, 'Retrogaming Community Memory and Discourses of Digital History' in Paul Wilson and Patrick McEntaggart (ed), *Navigating Landscapes of Mediated Memory* (Inter-Disciplinary Press 2011) <<http://www.inter-disciplinary.net/wp-content/uploads/2011/04/jsuominenpaper.pdf>>.

<sup>64</sup> Ibid.



Chapter 5 uses a case study of a single game *The Hobbit* (Beam Software, 1982-1987) to ask what kinds of material might be best used to represent games of the era to contemporary audiences. In reflecting on how to document and display games of the era, I address Lowood's question; is a game an "artifact or activity?",<sup>65</sup> exploring how a specific game's design and cultures of play might be understood and exhibited. I argue that whilst playable software is desirable, what we will be able to access, now and in the future, through software preservation will not replicate the original conditions of play. Proposing that playing a game in the gallery may not be the best way to communicate those qualities of the game that make it culturally significant, I consider what kind of associated documentation is best able to do this. I examine the materials that have been shared online documenting *The Hobbit*, examining how the game is represented in retro game sites and personal blogs. Reflecting on the need to include documentation of videogame systems and experiences to reveal how they were understood as played at the time, I ask what can be learnt from the act of exhibition to help determine what to collect. I argue for the potential of player-made artefacts and the value of popular memory to offer a more complex understanding of games as played.

Chapter 6 examines the practices of selected retro-gamer community sites. This approach combines textual and content analysis of the selected fan community websites, World of Spectrum and Lemon64, and email interviews and ongoing discussion with site coordinators, Martijn van der Heide (World of Spectrum), and 'Mayhem' (Lemon64). The analysis of each site's structure, layout and interface, as well as their opportunities for engagement and interaction, are considered in relation to Beam Software's

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<sup>65</sup> Lowood, 'Playing History with Games: Steps towards Historical Archives of Computer Gaming.'1.

*The Hobbit* and *The Way of the Exploding Fist*. The preservation efforts and social structures of these retro fan sites are contextualized within theories regarding the productivity of media fans and gamers proffered by Henry Jenkins and Jane McGonigal, Pierre Levy's notion of collective intelligence of online communities, and discussion regarding the significance of fan labours.<sup>66</sup> The research includes discussions held with the collections officers at the Australian Centre for the Moving Image on the catalogue of microcomputing game titles and their associated materials in the institution's collections management software.

#### 1.6.4 The Popular Memory Archive

Section three documents the Popular Memory Archive as a means to collect and share the memories of those who lived and played their way through the 1980s. It surveys activity on the site and evaluates the online contributions for their significance. From this analysis, I consider modes of discourse deployed through the PMA, and how more inclusive and reflective practices working with online communities can better inform exhibition of historic games. The discussion examines other curatorial examples to consider how exhibitions can engage users in meaningful dialogues about collections. The chapter also investigates how systems for the display and documentation of digital objects can evolve to meet the needs of both historical games and contemporary users.

#### 1.6.5 Conclusion

In concluding, the thesis reflects on what insights its two complementary curatorial inquiries into the history of Australian videogames of the 1980s

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<sup>66</sup> Jenkins, 'Interactive Audiences? The "Collective Intelligence" of Media Fans'; Henry Jenkins, *Fans, Bloggers, and Gamers: Exploring Participatory Culture* (New York University Press 2006); McGonigal; Pierre Levy, *Collective Intelligence* (Perseus 1997) Baym and Burnett; SM Petersen, 'Loser Generated Content: From Participation to Exploitation' (2008) 13 *First Monday* 1  
<<http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2141/1948>>.

and the curatorial practices of retro gamer communities provide for the curation of a local collection of games for the era of the microcomputer. I argue for the importance of player memory to document videogames as experiences, having established the significance of these recollections for detailing individual encounters with gameplay and representing socio-cultural understanding of videogames of the period. As demonstrated by the PMA I argue the potential for the online exhibition to develop a more open approach to collections that encourages and invites a range of participation and knowledge sharing with expert individuals, communities and audiences. I suggest that more than just complementing the museum's collection of material culture, these practices begin to address the challenges of curating for a digital future.



## Videogames as Cultural Heritage

The curation of videogames, their collection and preservation, creates new challenges for the museum. In developing the Games Lab for ACMI, I encountered resistance to embracing a new art form that was poorly understood, difficult to collect and not associated with existing museum expertise or audiences.<sup>67</sup> In this chapter I discuss key arguments concerning game preservation and the contribution that retro gamers can make to institutional strategies for the collection of videogames. I then situate the discussion within the historiography of games and, in particular, Australian game history. I identify gaps in knowledge that will be addressed through my research. These include the lack of historical research into early Australian game development, and the need to develop practices for the institutional preservation of videogames that enable contributions from players and retro gamer communities.

The chapter begins with an outline of the ongoing debates about what needs to be preserved to “save” videogames. I reflect on some of the challenges that the collection, exhibition and preservation of born digital artefacts present to the Museum’s traditional object-based approach. In contrast to the majority of critical scholarship on game preservation, which is focused on creating archives as resources for scholars, I give primacy to questions of exhibition.<sup>68</sup> Exhibition has been both a provocation and a proving ground for testing the meanings of historical artefacts. I argue for the significance of the exhibition as a tool of inquiry and a means to help understand “what to collect”. I examine a subset of preservation literature that addresses the importance of the exhibition in developing strategies for

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<sup>67</sup> The ACMI Game Lab opened in March 2005 and closed in 2008 to allow the ground floor redevelopment of the *Screenworlds* gallery.

<sup>68</sup> McDonough and others; Newman, *Best Before: Videogames, Supersession and Obsolescence*; Monnens and others; Lowood, ‘Shall We Play a Game: Thoughts on the Computer Game Archive of the Future’; Kraus and Donahue, ‘Keeping Emulation Environments Portable’ (*KEEP 2009 - 2012*) <<http://www.keep-project.eu/ezpub2/index.php?/eng/About-KEEP>>; ‘EFCAMP Homepage.’

access and interpretation.<sup>69</sup> In particular, I consider how Raiford Guins' 2014 examination of the material history of videogames in museums offers a counterpoint to the challenges of the virtual existence of historical games.

### 2.1 Collecting Videogames

The ideal task of videogame storage corresponds to a Borges map 1:1 of the world. Federico Giordano<sup>70</sup>

In 2002, Lowood called for new institutional and curatorial models capable of addressing videogames.<sup>71</sup> At the end of that decade, however, a survey on the state of Digital Preservation by Barwick, Dearnley, and Muir revealed that most heritage institutions remained locked into a traditional object-based understanding of collecting, and still did not have policies capable of supporting digital artefacts.<sup>72</sup> In the twentieth century, when cultural gatekeepers debated the merits of photography and film as art forms, their deliberations were not conducted under the shadow of the impending demise of the actual works. Videogames of the 1980s, however, are already on the endangered artefacts list, their storage systems vulnerable to data decay and 'bit rot',<sup>73</sup> and their hardware to the fusing of

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<sup>69</sup> Newman and Simons, 'Make Videogames History: Game Preservation and The National Videogame Archive'; Guins.

<sup>70</sup> Federico Giordano, reprinted in English by Bruce Sterling as "Dead Media Beat: Federico Giordano, 'Almost the Same Game,'" *Wired*, April 2011, [http://www.wired.com/beyond\\_the\\_beyond/2011/04/dead-media-beat-federico-giordano-almost-the-same-game/](http://www.wired.com/beyond_the_beyond/2011/04/dead-media-beat-federico-giordano-almost-the-same-game/).

<sup>71</sup> Lowood, 'Shall We Play a Game: Thoughts on the Computer Game Archive of the Future.'

<sup>72</sup> Joanna Barwick, James Dearnley and Adam Muir, "Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation" (2011) 6 *Games and Culture* 373 <<http://gac.sagepub.com/cgi/doi/10.1177/1555412010391092>> accessed March 29, 2012.

<sup>73</sup> Data decay is the gradual decay of software storage media. Bit rot, described as software entropy, is not a physical decay but the deterioration of software performance over time as it becomes unresponsive due to environment change, with degradation of compatibility even though "nothing may have changed" in the actual binary code of the software.

logic chips.<sup>74</sup> Traditional notions of conservation are no defence, for digital information is not subject to gradual decay. It either exists or it does not.

The shadow of the imminent loss of videogame hardware and software dominates the discourse about game preservation. For institutions whose collections and preservation strategies are built around the preservation of objects, the ill-defined boundaries of videogames present further issues. Defining what to collect is the focus of much videogame preservation literature. With Game Studies still ruminating on what defines a videogame, preservationists are tackling the issues of how to collect historical games before they are out of reach. Central to preservation are questions concerning how hardware and software can be preserved, how much code can tell us, and what other materials are needed to understand historical games.

The 2010 'Preserving Virtual Worlds Report' (PVWR) identifies how a game's functionality and appearance are reliant on multiple interrelations between hardware and software, and how these interdependencies reveal the instability of videogames, their permeability and co-dependencies.<sup>75</sup> Software preservation is dependent on emulation, migration or remediation processes that all create change. Preservation discourses have identified the *significant properties* of "usability and appearance" as critical to use, and determined that these must be maintained with each transformation that occurs in the process of copying, converting and

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<sup>74</sup> Ironically this early era of game hardware and storage is more stable than the more recent generation of computer videogames dependant on graphics cards, drivers and other plugins and utilizing features such as DRM, remote servers, online multiplayer and digital distribution.

<sup>75</sup> McDonough and others.



reformatting of digital information for digital preservation.<sup>76</sup> The properties that determine the ‘look and feel’ of digital artefacts include features like speed and text scrolling, colour and font size. Determining *significant properties* forces the question – what is the game? What are the defining qualities of the game to be preserved?<sup>77</sup> Software preservation provides not a copy as much as a “co-responsence,” as N. Katherine Hayles suggests.<sup>78</sup> The *significant properties* of games are commonly associated with technical issues germane to software preservation rather than questions about the experience of videogames and what makes them culturally significant. Lowood, however, stresses the importance of understanding that videogames are themselves not stable artefacts or texts:

Games exist somewhere between the text and the experience, confounding preservation strategies that rely on notions of content fixity taken from other media. Hardware and software objects alone cannot document the medium of the computer game. What is saved by preserving consoles, hardware, and software alone, without recording game play?<sup>79</sup>

My intent is to determine how to document and display videogames for microcomputers of the 1980s. I propose that individuals’ recollections of playing, playing with, and of making games are important for museums and cultural collections to consider documenting. Lowood has drawn

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<sup>76</sup> Margaret Hedstrom and others, “The Old Version Flickers More”: Digital Preservation from the User’s Perspective’ (2006) 69 *The American Archivist* 159; McDonough and others; Winget and Murray; Kraus and Donahue.

<sup>77</sup> But who has the authority to determine what the defining features of the original work are “If every difference makes a difference”, as argued by Winget and Murray in their examination of changes wrought by emulation. Who is the ‘authority’ used to define when can the emulated/migrated work no longer be considered representative of the original. Is it the designer? What of the players’ experience? And what is the role of the curator? Megan A Winget and Caitlin Murray, ‘Collecting and Preserving Videogames and Their Related Materials : A Review of Current Practice , Game-Related Archives and Research Projects’, *Proceedings of the American Society for Information Science and Technology* (School of Information, University of Texas at Austin; 1 University Station, D7000, Austin, TX 2008).

<sup>78</sup> N Katherine Hayles, *My Mother Was a Computer* (University of Chicago Press 2005).

<sup>79</sup> Lowood, ‘Shall We Play a Game: Thoughts on the Computer Game Archive of the Future.’ 8.

attention to the individual performance aspects of play through his examinations of elite play and machinima.<sup>80</sup> James Newman argues not just for the centrality of acts of play, but for the importance of the player culture that surrounds videogames. Newman suggests that the interactivity of videogames makes them suites of resources to be played with, rather than fully formed objects. In contrast to the focus on software within preservation, he suggests that the preservation goal for the long-term playability of games is (probably) unachievable and perhaps should not be videogame preservation's major preoccupation. He argues for the preservation of records of gameplay as a more enduring and accurate legacy of videogames. His position is that the materials players generate – such as walkthroughs, speedruns, tactical guides and help-forums – not only provide a record of the games, but are themselves intimately enmeshed with how games are understood by their users.<sup>81</sup>

In posing the question of how to archive videogames, media scholar Federico Giordano toys with the irony that the digital numerical code of software makes possible — in theory — a perfect preservation. He notes that Lev Manovich and Marisa Pizza argue the "discrete and compartmentalized data" of code *should* be reproducible with no loss of quality. Manovich and Pizza's theoretical observation on the nature of code ignores the reality of preservation including the loss of the material features of running software on particular hardware and other issues caused by emulation but, most importantly, Giordano declares, it does not address the centrality of the relationship between the text and the user.

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<sup>80</sup> Henry Lowood, 'Perfect Capture: Three Takes on Replay, Machinima and the History of Virtual Worlds' (2011) 10 *Journal of Visual Culture* 113 <<http://vcu.sagepub.com/cgi/doi/10.1177/1470412910391578>>; Henry Lowood, 'Players Are Artists Too', *Art History of Games Symposium* (2013) <<https://stanford.academia.edu/HenryLowood>>; Lowood, 'Video Capture: Machinima, Documentation, and the History of Virtual Worlds.'

<sup>81</sup> Newman, *Best Before: Videogames, Supersession and Obsolescence*; Newman, '(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay.'

Interactive software is more than just ones and zeros. He explains, “Games must always be ‘experience’ – peculiar ways of relating between the player, an interface and a text, as well as the expression of a given social context.”<sup>82</sup>

Giordano’s focus on player experience suggests some of the challenges for the curator trying to build and display a historic collection. Rather than the traditional understanding of authorship as sitting with the game creators, the player’s performance also authors experience, with the mutable nature of software allowing for even further intervention and invention by users.<sup>83</sup> For museums, the traditional idea of building a collection through the acquisition of representative objects, for example, collecting game hardware and copies of the software, is doubly challenged. It is challenged by the recognition that these objects will lose their functionality and also by the knowledge that the ‘original experience’ cannot be saved.<sup>84</sup>

How can Giordano’s definition of games as ‘experience’, with their multivariate factors, be collected and displayed? Confronted with the manifold challenges for the collection and preservation of videogames, it is not surprising that research into preserving game history has looked to the work of hobbyist and retro gamers who have already been tackling some of these tasks. These communities have been developing techniques and technologies for emulating and migrating games software, and documenting and collating information on historical games.

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<sup>82</sup> Giordano.

<sup>83</sup> Lowood, ‘Players Are Artists Too’; McDonough and others.

<sup>84</sup> Megan A Winget and Caitlin Murray, “Collecting and Preserving Videogames and Their Related Materials : A Review of Current Practice , Game-Related Archives and Research Projects,” *Proceedings of the American Society for Information Science and Technology* (School of Information, University of Texas at Austin; 1 University Station, D7000, Austin; Melanie Swalwell, “Moving on from the Original Experience: Games History, Preservation and Presentation,” *Proceedings of DIGRA 2013: Defragging Game Studies/Art History of Games* (2013) <<http://www.digra.org/digital-library/>>.

### 2.1.1 Retro Game Fan Communities

The literature on game preservation recognizes the importance of working with collectors and fan communities. Lowood, in his seminal 2002 presentation envisaging videogame archives of the future, argued that what is required to preserve these artefacts is collaboration. The collaboration he proposes is not just between institutions, but also to develop systems that can include the work of lay historians and communities of game players. These groups, he declares, had already commenced the task of preserving videogames before any institutional solutions were considered.<sup>85</sup> The importance of these communities is also acknowledged by EFGAMP (European Federation of Game Archives, Museums and Preservation Projects). EFGAMP brings together a coalition of European museums, archives, and research institutions to work together on the big issues confounding game preservation; the legal issues, the need for cohesive description and metadata, hardware and software solutions. EFGAMP proclaim that their roots in community projects are central to their vision and, it is implied, their credibility.<sup>86</sup> The 2010 'Preserving Virtual Worlds Report' (PVWR) calls for a collaborative institutional approach to preservation, stating, "Cultural heritage organizations also need to actively engage the gaming community."<sup>87</sup> Directors of the United Kingdom's National Videogame Archive, Iain Simons and James Newman, acknowledge the existence of substantial private collections of videogames by fans.<sup>88</sup> They highlight that the knowledge fans have of the pleasures of

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<sup>85</sup> Lowood, 'Shall We Play a Game: Thoughts on the Computer Game Archive of the Future.' 18.

<sup>86</sup> 'EFCAMP Homepage.' The founding members of EFCAMP are Computerspiele Museum (Germany), Digital Games Research Center (DIGAREC) (Germany), KryoFlux P&S Ltd (United Kingdom), MO5.COM (France), Royal Library, National Library of Denmark and Copenhagen University Library (The)(Denmark), Software Preservation Society (The)(United Kingdom) Subotron (Austria), VIGAMUS - The Video Game Museum of Rome (Italy)

<sup>87</sup> McDonough and others.127

<sup>88</sup> The National Videogame Archive (NVA) was a research project founded in 2008. It was joint project between the National Media Museum (Bradford) and Nottingham Trent University. Its directors were James Newman and Iain Simons and it was affiliated with the Gamecity Festival in Nottingham. In 2011 the National

videogames within popular culture are central to understanding the “cultures and practices of play and production”.<sup>89</sup>

The contribution of the gamer community to game preservation is strongly identified with the creation of technical solutions such as emulators, reflecting the urgency of issues of hardware and software preservation. In 2004, Lowood acknowledged that “emulators have to date been largely the work of hobbyists and player communities”.<sup>90</sup> Andreas Lange, director of the Berlin Computerspiele Museum, has championed retro gamer initiatives in developing tools for the conservation of complex digital artefacts. Lange has argued that retro gaming emulation practices offer a method for other digital preservation initiatives, that the ingenuity of gamers can help unlock lost and entombed data for other industries. Lange identifies the three million euro investment by the European Union in the KEEP (Keep Emulation Environments Portable) project as a milestone that recognises the value of “the technical achievements of the gamer community”.<sup>91</sup> The PVWR identifies how retro gamers have not only been responsible for creating emulators and investing long hours in other technical troubleshooting, but also acknowledges how they have also saved essential technical information. As collectors, retro game fans “often

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Media Museum was incorporated into the Science Museum Group initiating a shift from its media focus to STEM sciences. New Media Curator Tom Wooley's responsible for the NVA collection at Bradford left the museum in December 2012. The National Videogame Arcade, Nottingham, a museum dedicated to videogames, opened in 2015 with Iain Simons as co-director. Newman is also involved in curation at the new museum. The National Videogame Arcade exhibitions draw on the National Videogame Archive collections of over 12,000 objects of gaming significance. The National Videogame Archive collection is now managed by Nottingham Trent University and the London Science Museum. Gina Fairley, 'Who's Opening New Doors in 2015' (*ArtsHub*, January 2015) <<http://www.artshub.com.au/news-article/news-article/news/museums/whos-opening-new-doors-in-2015-246853>> accessed 3 March 2015.

<sup>89</sup> Newman and Simons, 'Make Videogames History: Game Preservation and The National Videogame Archive.'

<sup>90</sup> Lowood, 'Playing History with Games: Steps towards Historical Archives of Computer Gaming.' 11.

<sup>91</sup> Andreas Lange, "Computer Games as Digital Artefacts" Lecture ACMI Friday 14 October 2005, Andreas Lange, "If you can Preserve Games you can preserve everything (digital), Dagstuhl Seminar, 18 July, 2010, Claudia Pederson, 'The Museology of Computer Games - An Interview with the Curator of the Computerspiele Museum, Andreas Lange, and Art Historian and Archivist Dr. Winfried Bergmeyer' (2010) 4 *eludamos: Journal for Computer Game Culture* 1 <<http://www.eludamos.org/index.php/eludamos/article/viewArticle/vol4no1-7/148>>.

possess technical documentation regarding the hardware and software necessary to run a game that the game companies themselves may no longer possess”<sup>92</sup>. PVWR researcher Kari Kraus describes how the game manual she accessed for the interactive fiction *Mindwheel* was originally sourced from the retro game site Home of the Underdogs.<sup>93</sup> Whilst she got her copy from the author of the game Steve Hales’ website, Hales himself had sourced it from the fan site, the games designer reliant on the collections of retro gamers for access to his own work.<sup>94</sup>

The most recognizable achievement in crowd-sourced software preservation is the Multiple Arcade Machine Emulator (MAME). MAME emerged in 1997 when two Italian programmers, Mirko Buffoni and Nicola Salmoria, interested in the constraints that governed the aesthetics and design of arcade games, created a program that emulated the architecture of standard arcade games. They posted their emulator online and other coders started debugging the emulator and adding drivers to enable it to play additional arcade game ROMs.<sup>95</sup> A community of retro gamers dedicated to emulation and combining their knowledge and problem solving skills grew around the project. Buffoni recalls lengthy discussions on their mailing list as the community worked to tackle the perfect synchronization required for games like *Tempest* (Atari, 1981) and *Mr Do’s*

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<sup>92</sup> McDonough and others.124

<sup>93</sup> Home of the Underdogs (HotU) was Sarinee Achavanuntakul’s site where she reviewed and collected predominantly DOS ‘abandon ware’ videogames that she made available for download and play. Founded in 1998, her ambition was to “preserve out-of-print games that publishers no longer support, to keep them from falling into oblivion, and to honour other underrated games, including freeware games and recent commercial titles that might have been poor sellers”. Achavanuntakul, a merchant banker, stopped updating HotU in 2006 and in 2009 the server provider went bankrupt and the site went offline. Achavanuntakul moved on, but regular users of the original site have revived versions of HotU in various forms.

<sup>94</sup> Susan Manus, ‘Kari Kraus Talks About Digital Archeology, Video Game Preservation, and Being a “DH’er” (*The Signal*) <<http://blogs.loc.gov/digitalpreservation/2012/09/kari-kraus-talks-about-digital-archeology-video-game-preservation-and-being-a-dher/>> accessed 18 December 2013.

<sup>95</sup> A ROM image or file is a copy of the data of the Read Only Memory chip of the arcade game’s main board, a copy of the games software.

*Castle* (Universal, 1983).<sup>96</sup> The project was designed to be inclusive and Salmoria recalls:

When I started I knew absolutely nothing about arcade games. Everything I found was new for me, and there was very little information available. But MAME was designed from the start to make it as easy as possible to add new drivers, to be portable, and to encourage people to contribute. That is what made it successful.<sup>97</sup>

The stated aim of the project is to document hardware, and so MAME has a somewhat purist view of emulation, prohibiting programming hacks that might make a game run improperly, or run faster at the expense of emulation accuracy. As early as 1998 Salmoria lamented MAME's popularity with game fans who 'just want to play games' but don't care about the issues of technical accuracy for emulation and the preservation of old games.<sup>98</sup> "Our goal" states Buffoni, "was to document the inner workings of the arcade machines... We're preserving the treasure for future generations".<sup>99</sup> Whilst the emulators imitate the hardware of the original machines, the preservation of this knowledge is secured through the networked architecture of the internet. Once the code was released on the web it was shared and stored by numerous users. No longer dependent on specific hardware, the repeated replication of the code and its broad dispersal has ensured its survival. American Museum of the Moving Image director, Rochelle Slovin, considers this as a self-referential moment in the evolution of digital media; a moment where arcade games – among the first

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<sup>96</sup> Jose Q, 'Mirko Talks MAME' (*Jose Q's EMU Views*, 1998) <<http://www.emuviews.com/cgi-local/show.cgi?SERIAL=257>> accessed 6 August 2014.

<sup>97</sup> Jose Q, 'Nicola Salmoria Interviewed!' (*Jose Q's EMU Views*, 1999) <<http://www.emuviews.com/cgi-local/show.cgi?SERIAL=517>> accessed 8 August 2014.

<sup>98</sup> Ibid.

<sup>99</sup> Quoted in Rochelle Slovin, 'Hot Circuits: Reflections on the 1989 Video Game Exhibition of the American Museum of the Moving Image' in Mark J. Wolf (ed), *The Medium of the Video Game* (University of Texas 2001).

born digital media – were now being preserved on the web, within a wholly digital environment.<sup>100</sup> Where traditionally preservation was focused on protecting a singular item from depreciation by withdrawing it from use and exposure, the survival of born digital objects has been shown to benefit from their reproduction, proliferation and from the attention of the “crowd”. Nevertheless Slovin’s reflections ignore the more contentious issue of copyright, as, whilst the emulators are legal to share and distribute, the game ROMs, whose preservation also benefits from the emulators’ proliferation online, are predominantly not.

MAME illustrates the two key benefits of online community preservation; the many minds dedicated to problem solving, and the safety provided by multiple distributed copies circulating online. MAME’s achievements in allowing ongoing access to historic arcade games and documenting the machines’ functionality is beyond those readily achievable by a single institution. Library of Congress Librarian Leslie Johnston states, “The Multiple Arcade Machine Emulator is so successful a project, that after 10 years, they have a short list of games they *cannot* emulate”.<sup>101</sup> MAME has allowed for the ongoing study and exhibition of arcade games, its popularity creating awareness of the cultural value of these early games and triggering discussions of the importance of their preservation and associated copyright issues.<sup>102</sup>

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<sup>100</sup> Ibid.

<sup>101</sup> My emphasis. Quoted in Jon Ippolito and Richard Rinehart, *Re-Collection Art, New Media, and Social Memory* (MIT Press 2014). 137

<sup>102</sup> Looking to the lessons learnt from MAME, the KEEP project’s ambition is to build a universal emulator that works as a virtual machine rather than related to any specific platform. Carnegie Mellon’s Olive Executable Archive is also a virtual machine supporting emulators that work with differing kinds of executable code including a number of videogames. Access and, in particular, ongoing access is central to these visions. JMESS is a JavaScript-based emulator that simulates platforms like Atari 2600, Gameboy and Sega consoles, and early computers directly into a web browser created by a group of coders working with Jason Scott at the Internet Archive. It has the dual advantage of the virtual machine combined with the broad reach of browser-based interface – accessible to communities beyond those with the expertise of emulation. [<https://olivearchive.org/>]; Dan Pinchbeck and others, ‘Emulation as a Strategy for the Preservation of Games: The KEEP Project’, DiGRA



The celebration of the work of retro gamer communities, however, is tempered by concerns for the vulnerability and idiosyncrasies of game fan efforts. The PVWR's "quick survey" of the more popular emulation efforts by hobbyist and fan communities revealed that many emulators were incomplete and 70% did not produce viable emulation environments.<sup>103</sup> Without ongoing support even successful emulation software can quickly become obsolete. Newman and Simons warn against the seduction of characterising retro fans as uniformly careful conservationists and benign agents. They argue that the aims and responsibilities of the institutional archive may differ from community efforts. The curatorial ambitions of an institution, its specific collections policies and legal responsibilities, are mostly at odds with the more inclusive, laissez-faire practices of many fan collections. The sharing of collections of ripped game ROMs, featuring games stripped of their dates, credits, manuals, context and country of origins, by fans is a practice, Newman notes, that is clearly in conflict with a preservationist agenda.<sup>104</sup> There are, however, exemplars of practice. Lowood cites the work of the Classic Amiga Preservation Society for their standards for 'careful' emulation. He credits the group's website for its admirable summary of the complex issues surrounding the "bit perfect replication of software" necessary for its preservation and their definition of an acceptable version of a game's software game software, "-- not a crack or hacked version, not a budget version, not a re-release".<sup>105</sup> Newman commends the High Voltage SID Collection for the accuracy of its meticulous processes of authentication and cataloguing.<sup>106</sup> He also praises

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2009 -- Breaking New Ground: Innovation in Games, Play, Practice and Theory (2009)  
<http://eprints.port.ac.uk/2714/nhttp://www.digra.org/wp-content/uploads/digital-library/09287.31196.pdf>.

<sup>103</sup> McDonough and others.

<sup>104</sup> James Newman, 'Save the Videogame! The National Videogame Archive: Preservation, Supersession and Obsolescence The Best Game Is the Next Game' (2009) 12 M/C Journal 1 <<http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/167>>.

<sup>105</sup> Lowood, 'Playing History with Games: Steps towards Historical Archives of Computer Gaming.' 6

<sup>106</sup> Newman, *Best Before: Videogames, Supersession and Obsolescence*. 26-27

World of Spectrum, not just for the richness of the material and their dedication to authenticating ROMS, but for their practice of making every effort to secure permissions for the ROMS they host. The depth and professionalism of World of Spectrum's catalogue of games and resources are discussed in detail in Chapter 6 of this thesis.

In their 2010 survey of the state of game preservation efforts, Barwick et al lead with an acknowledgment of the work of retro fan communities, quoting KEEP team member UK academic and game developer Dan Pinchbeck that it is probable that "at least 50% of game preservation will be done at the fan-level".<sup>107</sup> The survey then directs its attention to the copyright issues of much fan-based activity. A point of difference between the institutional practices of preservation and much of the hobbyist community occurs around legal considerations. Pinchbeck, a developer himself, holds the line, maintaining, "It is not acceptable for professional researchers to be downloading illegal media".<sup>108</sup> Barwick et al reflect that, due to potential copyright infringement, fan-based emulation practices "are not a stable preservation solution" and "cannot be viewed as a legitimate research resource". Many curators, archivists and researchers recognise that without the fan communities' activities, they might not have any access to this material.<sup>109</sup>

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<sup>107</sup> Pinchbeck's comments date from his 2009 interview with Barwick et al. Barwick, Dearnley and Muir, 'Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation.' 376. <sup>108</sup> Ibid. 376

<sup>108</sup> Ibid. 376

<sup>109</sup> Games are not the first media form whose preservation has been dependent on the passion of fans overriding their legal rights. ACMI collections manager Nick Richardson recounts how a collection of historic news reels held by the Australian National Film and Sound Archive were saved by the very worker whose job it was to protect the rights of owners by destroying the prints after use. The government worker, convinced by the cultural value of these films, reneged on their duty to burn the prints, choosing instead to store them for over 40 years before donating them back to the nation. History has transformed their act from criminal to that of a national hero and international preservationist.

Against the legal quagmire of digital preservation, Lowood reflects on the virtues of the fan communities' agility, sharing the sentiments of Susan Corbett, Play it Again's legal investigator. Corbett states that the problem sits, in part, with the legal system's current lack of understanding about the processes required and the urgency to preserve digital artefacts.<sup>110</sup> Whilst archaic laws paralyse institutions, retro gamer communities are free to experiment with preservation solutions. Lowood acknowledges that the inventive and nimble hobbyist communities can set sail on waters that may currently be beyond the capacity of large institutions.

I think of the cultural institutions as like big battleships and the individual enthusiasts are like PT boats. The PT boats can get around much quicker but it is much more difficult to steer a battleship in a new direction. However, the PT boats/enthusiasts are more vulnerable to attack and destruction whereas the battleships are more resilient. Cultural institutions have more experience of long-term preservation strategies.<sup>111</sup>

The impact of legal issues is very important from an institutional perspective. Institutional preservation strategies necessitate engaging videogame developers and publishers, whose archives are equally as important to preserve as the games.<sup>112</sup> The 2009 IGDA white paper 'Before it's too Late', was a petition to the videogame industry to invest in their creative history, arguing for the creative, critical, and fiscal advantages of

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<sup>110</sup> Susan Corbett, 'Regulation for Cultural Heritage Orphans: Time Does Matter' (2010) 1 The WIPO Journal: Analysis and Debate of Intellectual Property Issues 180 <[http://www.wipo.int/export/sites/www/about-wipo/en/wipo\\_journal/pdf/wipo\\_journal\\_1\\_2.pdf](http://www.wipo.int/export/sites/www/about-wipo/en/wipo_journal/pdf/wipo_journal_1_2.pdf)>.

<sup>111</sup> Lowood quoted in Barwick, Dearnley and Muir, 'Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation.' 376

<sup>112</sup> Requests for game source code, even from the most esteemed cultural organisations such as MoMA, are very challenging for commercial companies. How can this IP be protected as preservation needs demand that they must give the institution some rights to alter and migrate code? Source code and design documentation may include material that has yet to be published. Code can contain elements that are locked down and not functional or visible in the final game. Unlike film, edited gamecode does not end up on the cutting room floor. As the PVWR notes, many companies see this request as equivalent to handing over the crown jewels.

preserving game history. A key component of the preservation agenda addresses the importance of recording stories of production that highlight the technical and creative achievements of individuals and companies. To help document and preserve the history of games, the IGDA White Paper and the PVWR both provide checklists of desirable items to request from developers – from the actual source code (the preservation of which would ensure ongoing access), through design documentation to oral histories. These checklists address the need to collect not just the work, but also document the design process and identify the contributions of the creative individuals and teams who make games.<sup>113</sup> Despite acknowledging the importance of working with fan communities and highlighting their achievements, both these projects propose a more detailed strategy for working with industry than any address to retro gamers. A 2013 study by PVWR and IGDA contributors Donahue and Kraus addresses the role of professional player communities in the preservation of virtual worlds, acknowledging the tension between industry and fan archivists. They also highlight the perceived threat the amateur knowledge communities pose to the expertise and standards of heritage institutions.<sup>114</sup> Examining the creative hacks, transformations and interventions that have kept games ‘alive’ in retro gamer communities, they suggest that, in contrast to the bit-perfect ambitions of institutional preservation, the versatile approaches taken by invested communities to preserve what they value ensures those qualities and the works, in some form, endure.<sup>115</sup>

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<sup>113</sup> Also the re[Create] project at University of Texas.

<sup>114</sup> Kraus and Donahue.

<sup>115</sup> Kraus and Donahue's Preservation by Adaptation is personified in the constant remaking of Adventure and “the hack” of the media art work Agrippa discussed by Kirschenbaum, which have prolong the works’ lives through recreation. It is an approach that has been embraced by Ippollito and Rinehart in relation to media art preservation and has been explored in practice by Sebastian Chan at the Smithsonian with ‘Planetary’. Ibid; Matthew Kirschenbaum, *Mechanisms* (MIT Press 2008); Sebastian Chan, ‘Planetary: Collecting and Preserving Code as a Living Object’ (*Cooper-Hewitt*, 2013) <<http://www.cooperhewitt.org/object-of-the-day/2013/08/26/planetary-collecting-and-preserving-code-living-object>> accessed 26 February 2014; Ippollito and Rinehart.

### 2.1.2 Player Communities and Preserving Gameplay

The urgency of the discussion on software preservation – the realisation that the designed objects themselves are about to be lost – tends to overshadow the question of what else needs to be conserved. In their “Risks to Videogames Longevity”, Kraus and Donahue list “context” last, noting “although this isn’t an immediate threat to the preservation of games, building contextuality is important to creating understanding for future users”.<sup>116</sup> The PVWR, with its focus on preserving playable games, attests to the need to prove historical significance to an audience who cannot see past old videogames’ archaic technology and gameplay. The PVWR recommends, “spending as much effort preserving the context of gameplay as the software that enables it”.<sup>117</sup> Acknowledging that this information does not sit in conventional publishing formats, the PVWR returns to Lowood’s call for the development of “preservation systems that are accessible by and can accept contributions from the gaming community”,<sup>118</sup> systems that will allow the gaming community to assist in documenting their own activities and cultures. There are, however, few examples of what these relationships might actually look like.

The example discussed by the PVWR is the Archiving Virtual Worlds video collection, part of the How they Got Game project by Stanford University Humanities Lab, at the Internet Archive. Here individuals can contribute recordings of activities and events in virtual worlds and immersive games; many provide commentaries and personal reflection as they navigate through the world.<sup>119</sup> These records reveal virtual worlds as ‘occupied’. With its stated academic aims and focused research ambitions,

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<sup>116</sup> Kraus and Donahue.3

<sup>117</sup> McDonough and others.29

<sup>118</sup> Ibid. 7

<sup>119</sup> Other collections include the Nextgenwalkthrough collection and the Lets Play collection.

this collection is, perhaps unsurprisingly, dominated by the efforts of the research teams. Other, later, collections on the Internet Archive offer better demonstrations of the proposition of community contribution. The Speed Run Collection, for example, is directly linked to the Speed Demo's Community Archive, an active collective who create and share runs and whose members check the veracity of uploaded runs. The Let's Play collection of narrated gameplay includes both video and text. It is an alliance with the Let's Play Archive that evolved from the community forums of Something Awful. At the time of writing there were over 1534 Lets Play contributions, with more being added. The Internet Archive also hosts the Nextgenwalkthroughs.com collection. Originally a broadcast site for ExplictD&the2Chimps walkthroughs, its format now as wikigameguide.com readily supports others to upload and share walkthroughs. The last one to note here, and a resource that has particular relevance to the era of my research, is the C64 game Video Archive. This collection is predominantly the work of one dedicated fan, Reinhard Klinksiek, who is committed to making comprehensive gameplay recordings of Commodore 64 games, and is drawn from his website C64 Longplays. Hosted on the Internet Archive, a member of the International Internet Preservation Consortium, Klinksiek's C64 Longplays have a better chance of both surviving and being found.<sup>120</sup>

In addition to the creation of repositories for accepting gamer contributions, the PVWR advocates for the archiving of fan created websites including those devoted to retro gaming. It is an approach that does not directly meet the criteria for collaborative practice as proposed by Lowood. There are also significant issues in harvesting sites with rich

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<sup>120</sup> The Internet Library was officially designated as a library by the State of California in 2007. [https://en.wikipedia.org/wiki/Internet\\_Archive](https://en.wikipedia.org/wiki/Internet_Archive), accessed 10 July 2015

content. The process may not capture video, audio, attached JPEGs and PDFs. It is not unusual for sites such as World of Spectrum to have robot exclusion protocols so they cannot be crawled by archiving bots. This means that many key sites cannot be documented in this manner and others may produce archival copies that are trivialised by the significant loss of content.<sup>121</sup>

Preserving Virtual Worlds (2008-2010) is not the only preservation initiative that has yet to fully explore the potential of working with fan communities. In presenting the United Kingdom's National Videogame Archive ambitions in 2009, Simons and Newman state that the National Videogame Archive is "keen to explore the histories, roles and value of fans both as archivists and as videogame researchers".<sup>122</sup> Despite their proclamation of working with fan communities as a tenet of the National Videogame Archive, Simons and Newman are yet to address this idea in the displays at the new National Videogame Arcade where Iain Simons is the co-director. The National Videogame Arcade is a dedicated museum that draws on the resources of the National Videogame Archive. The National Videogame Archive collected fan memories by interviewing players at the annual Gamecity Festival in Nottingham, as part of the 'Save the Videogame' campaign launched in 2008. The Save the Videogame website, now defunct, did showcase video interviews with UK game developers explaining why they would select particular games to be 'saved'. The player interviews responding to the same question are, however, yet to be displayed.

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<sup>121</sup> Jo Hocking outlined how the Internet Archive bots may not capture significant amounts of content from a website, archiving just the barest bones. Jo Hocking, 'Search and Rescue: Saving the South Australian Web', *Born Digital & Cultural Heritage* (2014).

<sup>122</sup> Newman and Simons, 'Make Videogames History: Game Preservation and The National Videogame Archive.'

In developing the aims of the National Videogame Archive in 2008, Newman and Simons' approach was informed by their experience exhibiting games. Through their work at the Gamecity Festival, a curatorial exercise in presenting videogames and the cultures that surround them, Newman and Simons observed that making historical games playable is not necessarily the best way to make games understood. Newman argues that games alone are "really bad at telling their stories".<sup>123</sup> In their 2009 National Videogame Archive statement they argue for the importance of exhibition, stating, "developing mechanisms and strategies for public display and interpretation is among the most pressing and interesting" of the National Videogame Archive's research projects<sup>124</sup>.

## 2.2 Exhibiting Games

Exhibitions tell stories, they test ideas, and they generate new knowledge. As I have discussed elsewhere, it did not take videogames long to find their way into the gallery.<sup>125</sup> The exhibition *Hot Circuits* (1989), by director Rochelle Slovin of the American Museum of the Moving Image, welcomed the latest expression of screen culture by presenting an arcade in the gallery. With its selection of significant arcade machines, the exhibition celebrated the artistry of mathematical minimalism, examined the new aesthetic possibilities of game mechanics and explored how arcade games expressed the anxieties of the Cold War and the burgeoning technodystopianism associated with computing. What she had not expected is how profoundly the exhibition would confront audiences with the technologies' rapid redundancy, as many games experienced as dynamic

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<sup>123</sup> Newman (2009) quoted in Barwick, Dearnley and Muir, 'Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation.' 384.

<sup>124</sup> Newman and Simons, 'Make Videogames History: Game Preservation and The National Videogame Archive.' 6

<sup>125</sup> Helen Stuckey, "Mods and Museums: Gaming the Future of Art and Institutions" in Emma McRae (ed), *Games Masters: The Exhibition* (Australian Centre for the Moving Image 2012).



and new in the early and mid-1980s felt old and dated by 1989.<sup>126</sup> The exhibition exposed the technological obsolescence built into videogame consumption before this convention was fully established as normative. Slovin noted how reviewers of the exhibition were struck by “how strangely ‘old’ these games seemed”.<sup>127</sup> What was so startling in 1989 is now a commonplace of how games are consumed. Later exhibitions such as *Game On* (2002) and *The Art of Videogames* (2012) utilise relentless technological evolution as a structuring and self-evident narrative. The rapid obsolescence is no longer novel as it was to exhibition goers of the 1980s for, as Newman has argued, supersession now underpins the cultural consumption of videogames.<sup>128</sup> That obsolescence was once a revelation attests to how the concept now forms an invisible concord in our consumption of videogames.<sup>129</sup>

Exhibitions can be persuasive tools. The exhibition of the “Digital Games Canon” at the *Gameworld* (2007) exhibition curated by Carl Goodman for Laboral Centre for Arts and Industry in Spain presented audiences with more than just an invitation to play historic games. The list of ten canonical videogames was a provocation initiated by Henry Lowood to draw attention to the cultural significance of videogames and to act as a catalyst for discussion of the importance of game preservation.<sup>130</sup> Presented to industry as a wake-up call to start valuing their history, it was also a

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<sup>126</sup> Slovin.<sup>147</sup>

<sup>127</sup> Ibid.<sup>149</sup>

<sup>128</sup> Newman, *Best Before: Videogames, Supersession and Obsolescence*.

<sup>129</sup> Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (MIT Press 2006).

<sup>130</sup> Created by Henry Lowood, Warren Spector, Steve Meretzky, Matteo Bittanti and Christopher Grant, the canon is modelled on the work of the National Film Preservation Board, which every year compiles a list of films to be added to the National Film Registry at the Library of Congress. It was first presented as a panel discussion at the Game Developers Conference, San Francisco in 2007 and received a lot of games media press, mostly around the selection of games, but it also spread ripples of awareness of the need to preserve games. The canon was included in *Gameworld* by curator Carl Goodman.

workable list to take to the Library of Congress as a place to begin.<sup>131</sup> Within *Gameworld* the display of the canon provoked associated questions about what this selection of games represented. What is the function of a canon? What else should be included? Whose canon is it?<sup>132</sup> The display of the canon in the gallery juxtaposed different game aesthetics, interfaces and mechanics, highlighting questions of diversity and raising the questions of what defines a videogame, and what we value about them. Some of the games had to be emulated to be displayed, an act that added more poignancy and provocation to the timely insistence of the need to start preserving historic games before they slip into oblivion. *Gameworld's* exploration of videogames included work drawn from the experimental practices of both art and industry. The exhibition's shifting fields of classification and categorisation demanded that audiences think about systems of representations. In this context the concept of a canon offered another tool to interrogate what videogames are.

Videogames are difficult objects in the gallery. Audiences are tasked with learning complex rule systems to play them. They often require high levels of game-based literacy and skill to navigate. Other practicalities that affect the display of games in the gallery include their lengthy play times and the investment required to uncover, unlock, and access both areas and gameplay features that may define the game. Newman has explained a single play-through is only ever a partial, or one possible, 'reading' of a game.<sup>133</sup> In addition, videogames, whilst built with a set of internal meanings, also traffic with meanings from outside. They are tied to specific historical contexts and can never be experienced in the way they originally

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<sup>131</sup> Henry Lowood, 'Ten Games You Need to Play: The Digital Game Canon' in Erich Berger (ed), *Homo Ludens Ludens* (Laboral Centre for Art and Creative Industries 2009)  
<<http://www.laboralcentrodearte.org/en/recursos/articulos/los-que-hay-que-jugar-the-digital-game-canon>>.

<sup>132</sup> Selected predominantly by North Americans yet exhibited to a Spanish audience.

<sup>133</sup> Newman, *Best Before: Videogames, Supersession and Obsolescence*.

were.<sup>134</sup> One of the pressing questions for the curator is how to document and display the culture that surrounds games. Can this be rendered through hands-on gameplay? Iain Simons does not think so: “The concern is how do we translate and codify the cultural importance of videogames and how do we explain what videogames are to someone who has not seen them before and in all likelihood, the thing that does that best is not the videogame”.<sup>135</sup>

To create cultural context, museums collect and display objects other than the games themselves. These collections are composed of the ephemera that surround games, traditional interpretative materials such as publications and merchandise, box art and manuals, and, increasingly, new forms of player-created content. How this paratextual material is used to contextualise videogames depends on the nature of the exhibition’s curatorial intentions. Museums address videogames as cultural artefacts in ways that reflect the broader cultural agendas of the individual organisations. Museums are themselves diverse in scale, discipline and role. In their 2010 comparative case study on game preservation, Barwick et al consider how different museums have different ways of interpreting games. Director Andreas Lange explains that the Berlin Computerspiele Museum is interested in demonstrating that “computer games are more than just toys”. The National Media Museum, Bradford, is interested in how the community has consumed videogames as new media culture. For the Strong National Museum of Play, Rochester, videogames are a new development in the history of play.<sup>136</sup> In contrast, the Museum of Modern

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<sup>134</sup> Barwick, Dearnley and Muir, ‘Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation’; Jason Anthony Wilson, ‘Gameplay and the Aesthetics of Intimacy’ (Griffith University 2007).

<sup>135</sup> Quoted in Barwick, Dearnley and Muir, ‘Playing Games With Cultural Heritage: A Comparative Case Study Analysis of the Current Status of Digital Game Preservation.’ 384.

<sup>136</sup> Ibid.

Art in New York collects videogames as works of interaction design, forming part of its Architecture and Design collection. These individual curatorial ambitions govern how and what works are collected and displayed.

### 2.2.1 Material Culture – Digital Heritage

In his exploration of how the museum treats the material history of videogames, Raiford Guins asks what kind of histories museum collections tell. Investigating the afterlife of games within museums, he considers Lowood's question of 'experience or artefact',<sup>137</sup> interrogating the value of the stuff of games when it is no longer 'activateable'.<sup>138</sup> Guins enters the world of Adorno's museal to discover that the games of his youth are now entombed behind glass.<sup>139</sup> He asks how the meanings of things change when they enter the museum, how, as Andre Malraux wryly observed, the museum "transforms gods in to statues" or, as discussed by Guins, activities in to artefacts.

Navigating the collections of a diverse group of US museums, Guins cannot help but express his longing for the perpetual possibility of playing games on their original hardware; a desire he blames on a mix of personal nostalgia and deep scholarly investment in the history of things.<sup>140</sup> He investigates the types of experiences museum offer; how narrative is used to transform "trash" to "icon", and how curation makes the familiar

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<sup>137</sup> By 'artefacts' I generally mean 'objects'. This text was written before reading Suominen's account of Staudenmaier and "the artifact's role in historical events." Suggesting the parameters to define a game or a gaming device as the artefact that defines the particular games and game device details "with little or no reference to the larger nontechnical [or non-game] context". Suominen, 'How to Present the History of Digital Games.'

<sup>138</sup> Guins.

<sup>139</sup> Theodor Adorno wrote, "The German word 'museal' has unpleasant over-tones. It describes objects to which the observer no longer has a vital relationship and which are in the process of dying." Theodor Adorno, 'The Valery Proust Museum,' in his *Prisms* (Cambridge, Mass., 1981), 173.

<sup>140</sup> Including the Strong Museum of Play, Computer History Museum, Washington and the Smithsonian National Museum of American History.

strange to reveal new understandings. He asks, what happens to the non-digital artefacts of game history behind the glass? Guins' personal experience of some of the games as 'living objects' provides him with insight in his examination of their new meanings in their 'afterlife'.

The focus of Guins' study is the demand for a greater awareness of the material history of videogames. He argues that, despite being born digital, videogame history should not purely focus on hardware and software but should address other forms of design history. Videogames, as objects, also belong to the histories of industrial design, package design, and graphic design. In his examination of illustrator Cliff Spohn's game cartridge packaging for Atari, Guins draws awareness to how central Spohn's work was to defining player understanding of both the games and Atari's brand. Guins' investigation highlights how Games Studies have neglected aspects of material history such as package design. Despite his unbridled romanticism about the materiality of artefacts in his analysis of Atari's box-art of the 1970-80s, Guins surprisingly treats the original artefacts within the museum collections that he encounters on his journey and the online JPEG collection of images on Moby Games as equal.<sup>141</sup> "This chapter" he writes, "strives to keep the wrapping intact on the surviving ephemera of video games, whether in the form of an original 3D object displayed in a museum or a 2D digital object stored in an online repository like MobyGames".<sup>142</sup> Guins confesses his reliance on the unofficial, non-traditional, amateur or alternative archives based on the web. He

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<sup>141</sup> Moby Games is a community created online database of information about videogames. Members can add material that is verified by other community members. Founded in 1999, in 2010 it was sold to Gamefly, causing the abdication of many community members unhappy about providing free labour to a commercial company. A buggy redesign of the site and poor communication in 2013 saw further fallout from community. The site was sold in 2013 to Bleu Flame Labs owned by a community member Jeremiah Freyholtz, who reinstated the original interface and implemented bug fixes restoring the confidence of many members of Moby's community. <https://en.wikipedia.org/wiki/MobyGames> accessed 4 April 2015

<sup>142</sup> Ibid. 172

provocatively asks whether these fan archives are the standard of archival research for the history of games.

## 2.3 Videogame History

The opening section in this chapter identified the need to develop videogame preservation practices that enable contributions from gamer communities. The literature review revealed that, despite this recognition being explicitly raised by Lowood in 2002 and reiterated throughout the literature, there are few exemplars of practice. The previous section on the exhibition of videogames discusses issues regarding the collection and display of videogames and the potential of exhibition curation as a tool for critical examination. This next section discusses approaches to videogame historiography and the lack of research into early Australian game development.

One challenge of writing recent history, explain Renee C. Romano and Clair Bond Potter, is that historians need to learn unfamiliar and non-traditional research skills. Historians need to access archives that may not accord with their understanding of authentic and accredited resources. In the digital age, investigating recent history may require searching through the glut of information on the internet. This, Romano and Potter suggest, creates new perils and possibilities for the historian.<sup>143</sup> The lack of official archives for researchers and their consequent dependence on many amateur endeavours online, in part, underlie the current drive to develop institutional archives for videogames.<sup>144</sup> The contributions of theorists

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<sup>143</sup> Claire Bond Potter and Renee C Romano, 'Just over Our Shoulder: The Pleasures and Perils of Writing the Recent Past' in Claire Bond Potter and Renee Romano (eds), *Doing Recent History* (The University of Georgia Press 2012).

<sup>144</sup> Carl Therrien, 'Video Games Caught Up in History. Accessibility, Teleological Distortion, and Other Methodological Issues' in Mark J. Wolf (ed), *Before the Crash: Early Videogame History* (Wayne State University Press 2012).

relevant to the scope of the research, in particular Guins, Lowood, Newman, Suominen and Swalwell, are discussed below in terms of the challenges of approaching the recent history of videogames.

While there has been a focus in preservation debates on preserving historical resources for research, the purpose of game history itself has been neglected. Reflecting on the state of game history in 2013, Swalwell called for attention to historiography for videogames, declaring that more critical thinking about the methodology and the aesthetics of videogame history writing will help progress it beyond “existing forms – “best of” lists, canon formation, hardware anniversaries and the obsession with origins”.<sup>145</sup> Guins concurs, declaring that “critical historical studies of videogames” are long overdue.<sup>146</sup>

In reflecting on the discourses of videogame history, Suominen has embarked on a study to offer a set of historical genres. He proposes that the history of videogames, whether located online or within the growing number of printed game histories (both popular and academic), can be divided into four categories. These are: (1) enthusiasts; uncritical histories of highlights supporting a master narrative of progress, reflecting both Nietzsche’s “monumental history” in its ‘great deeds and great men’ approach and “antiquarian history” in its uncritical collection of monuments and moments; (2) emancipatory; counter-narrative histories positioned to challenge the assumptions of the monumental and antiquarian approaches; (3) genealogical; histories that use taxonomy to reveal similarities and difference; (4) deep excavations; intensive studies

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<sup>145</sup> Melanie Swalwell, ‘Turning Historical Fragments into “a Unique Experience with the Past”: Reflections on Conducting, “writing”, and Experiencing Games History’, *CFP: The History of Games International Conference* (2013).

<sup>146</sup> Guins.

within Media Archaeology and Platform Studies that investigate videogame technologies. These four categories, in turn, can be divided into three discursive patterns: the historical, heritage, and retrospective discourses. Suominen is not pedantic about his categories, merely offering them up as a starting point for a more critical discussion of game history. He explains how the categories overlap and interweave. The implication is that videogame history will be the creation of such a mix of disciplines, schools of thought, authors and audiences that there are too many variables at play to suggest any kind of exhaustive taxonomy.

Videogame history has been dominated by the first of Suominen's genres, that of "enthusiasts" history.<sup>147</sup> In 2005, media archaeologist Erkki Huhtamo described how the extant published game histories were largely uncritical studies dedicated to "amassing and organising data" as a uniform history of the "who", "what" and "when" of the emergence of videogames. He dubbed them the "chronicle era"<sup>148</sup> These texts are often written by a generation who grew up with these games and according to Huhtamo lacked critical distance to their subject, failing to situate game history within a wider framework. Guins, recognising that he is dealing with recent history, is less troubled by these 'chronicles'. He contends that they offer useful accounts of "first generation knowledge", and should be valued for their subjective and experimental voices. He identifies them as resources for those embarking on much needed critical histories. Guins takes the same approach to the amateur archives of retro gamers. He describes the best of the online sites as belonging to the "collections era" in their amassing of the collections, documentation and preservation of games

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<sup>147</sup> Suominen, 'How to Present the History of Digital Games.'

<sup>148</sup> He cites the books of Stephen L. Kent, Rusel De Maria, Van Burnham, Leonard Herman and Johnny I. Wilson. Erkki Huhtamo, 'Slots of Fun, Slots of Trouble: An Archaeology of Arcade Gaming' in Joost Raessens and Jeffrey Goldstein (eds), *Handbook of Computer Game Studies* (MIT Press 200



and game materials that makes historical research possible.<sup>149</sup> Suominen classifies most of these retro gamer sites as “enthusiasts” history but, rather than the monumental histories of great men and great deeds of the “chronicle era”, he equates their catalogues with the lists of Nietzsche’s antiquarian history with their uncritical, objectifying admiration of the objects of the past.<sup>150</sup>

Both Suominen and Newman note a lack of interest within Game Studies for critically examining videogame history.<sup>151</sup> For Newman, this lack of interest in game history (and preservation) is fuelled by the technology-dominated ‘march of progress’ that governs videogame marketing and economy. Stephen Kline described this as videogames’ “perpetual innovation economy”.<sup>152</sup> Carl Therrien has identified this phenomenon as resulting in videogame history’s ‘teleological illusion’.<sup>153</sup> More than just reducing videogame history to one of technological evolution, the dominant marketing message that the ‘best game is the next game’, argues Newman, is dismissive of history’s value.

Lowood provides a wider perspective, discussing how the issues facing videogame history are comparable to those encountered by the relatively recent discipline of the History of Science. Videogame history is positioned within a similar pattern, starting with the need to move beyond chronicles of a succession of scientific/technological achievements. He argues the two disciplines share the tensions of writing history from within, characterised by relating scientific/technology discoveries (and ideas) to each other,

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<sup>149</sup> Guins.

<sup>150</sup> Suominen, ‘How to Present the History of Digital Games.’

<sup>151</sup> Ibid; Newman, *Best Before: Videogames, Supersession and Obsolescence*.

<sup>152</sup> Ibid; Stephen Kline, Nick Dyer-Witheford and Greig De Peuter, *Digital Play: The Interaction of Technology, Culture and Marketing* (Grieg De Peuter ed, McGill-Queen’s University Press 2003).

<sup>153</sup> Therrien.

versus the external approach of situating science (or videogames) in a socio-historical context.<sup>154</sup> As an example of this, Lowood's history of *Pong* (Atari, 1972) exposes how, by knowing the future of games is located in computing, *Pong's* own technological origins are ignored. *Pong*, he explains, is located in the story of electronics rather than computing. The machine has no code. In most accounts of the early history of videogames, however, *Pong's* tale is conflated with the history of *Computer Space* (Atari, 1971), whose origins lie with *Spacewar* (1961) and early super-computing. This presents a tidy linear narrative of technological progress. The obfuscation of *Pong's* technology is only part of the problem, according to Lowood. What is also lost is the distinction between the social and creative agendas of the university computer lab, those of the design and engineering of a commercial product for market, and the very different ambitions of the human agents working with the technology.<sup>155</sup>

Lowood contends that the histories of games need to reflect on wider issues of the impact of games on society, culture, religion, warfare and other aspects of life. He emphatically states that what is important in writing game history is to "have a point!"<sup>156</sup> In her reflection on the construction and reception of game history, Swalwell extends this demand for more reflective histories to a consideration of the audiences for game history. She considers how game history might be experienced by audiences and asserts that the "forms our research takes can convey some

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<sup>154</sup> History of Science was adapted as academic discipline in 1962. Lowood's timeline is for the formal adaptation of the discipline within academia noting that the origins of the History of Science itself can be identified in seminal texts from the sixteenth century in the work of Francis Bacon. Henry Lowood, 'Game Studies Now, History of Science Then' (2006) 1 *Games and Culture* 78 <<http://gac.sagepub.com/cgi/doi/10.1177/1555412005281404>> accessed 19 March 2012.

<sup>155</sup> Gitelman makes the observation that issues of agency seem rather absent from Bolter and Grusin's vision of technological innovation and also credits Bolter and Grusin for their own acknowledgement of the issue. Gitelman.

<sup>156</sup> Henry Lowood, 'Game Engines and Game History' (2014) 5 *Kinephanos: History of Games International Conference Proceedings*.

aesthetic and affective experiences for audiences, contemporary and future".<sup>157</sup>

In conclusion, this review identifies the need for a more critical approach to videogame history. Videogames need a history that offers more insights than lists of 'top' games, chronicles of great men and accounts of technology innovation. Against these traditions, the need to critically locate videogames in a socio-historical context is identified. This is not to undermine the importance of amateur archives, as without the efforts of dedicated fans much of the early history of videogames would be lost. Examining the paucity of critical game history, Guins identifies a growing number of analytical works that draw on game history including those of Platform Studies, examinations of videogames' space, and questions of play.<sup>158</sup> These works, however, explains Guins, are not history focused. One area that has emerged recently in critical historical studies of videogames is local game history.

### 2.3.1 Local Game History

Australia's early videogame development is not well documented. Australia is peripheral to the emergence of electronic gaming. Videogame history is identified primarily with the big players, Japan and North America. These are both nations whose development histories in the 1980s are dominated by narratives of the arcades and consoles. This history is often propagated as a universal one, such that many accounts do not even bother to mention to 'where' their material or statistics pertain. The universal vision of game history is also perpetuated by industry marketing

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<sup>157</sup> Swalwell, 'Turning Historical Fragments into "a Unique Experience with the Past": Reflections on Conducting, "writing", and Experiencing Games History'. 5.

<sup>158</sup> Guins sites the MIT Platform Studies series as including historical perspectives on computing platforms, Michael Nitsche's *Videogame Spaces* as addressing game space histories, and Mary Flanagan's *Critical Play* and Jesper Juul's *A Casual Revolution* as reflecting on the history of play. He also provides additional examples. Guins.21

messages of globalization. Nintendo's vision makes no distinction to their audience worldwide, stating, "Our R&D [team] is thinking about the world as a target for each of their products".<sup>159</sup> Such blindness to the geographic specificity of videogame history is being addressed through a growing focus on local videogame history. Local historio-cultural studies of 1980s gaming include research from Finland, Netherlands, the former Czechoslovakia, Turkey, Sweden, Canada and New Zealand.<sup>160</sup>

Game development and the experience of play did not follow the same patterns everywhere and the particularities of place and culture matter, explains Swalwell.<sup>161</sup> The arrival of home computing did not occur in a uniform way, with different platforms, access and cultural understandings of computing rolling out in different countries. In her work on the early history of New Zealand games, Swalwell advocates the need to pay attention to local points of difference in the stories of game production, and that they reveal that the history of technology, whilst in part global, is also culturally specific.<sup>162</sup> Microcomputers were often sold with near-identical hardware internationally, yet their associated meanings could be highly dependent on national or other culturally specific factors.<sup>163</sup> James Sumner describes how distinct the advertising messages for selling micros were in

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<sup>159</sup> Hiroshi Imanishi Head of Nintendo Game development cited in Kline, Dyer-Witheford and De Peuter. 190

<sup>160</sup> Svelch, 'Indiana Jones Fights the Communist Police: Text Adventures as a Transitional Media Form in the 1980s Czechoslovakia'; Petri Saarikoski and Jaakko Suominen, 'Computer Hobbyists and the Gaming Industry in Finland' (2009) 31 *IEEE Annals of the History of Computing* 20 <<http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=5223983>>; Erdal Yilmaz, 'History of Digital Games in Turkey', *DiGRA 2005 Conference Changing Views Worlds in Play* (2005); Swalwell and Davidson; Swalwell, '1980s Home Coding: The Art of Amateur Coding'; Swalwell, 'Cast-Offs from the Golden Age'; Swalwell, 'Towards the Preservation of Local Computer Game Software: Challenges, Strategies, Reflections'; K Roe and U Johnsson-Smaragdi, 'The Swedish 'Mediascape' in the 1980s' (1987) 2 *European Journal of Communication* 357 <<http://ejc.sagepub.com/cgi/doi/10.1177/0267323187002003006>> accessed 9 December 2013; Saarikoski; Frank Veraart, 'Losing Meanings: Computer Games in Dutch Domestic Use, 1975&#x2013;2000' (2011) 33 *IEEE Annals of the History of Computing* 52 <[http://ieeexplore.ieee.org/xpl/freeabs\\_all.jsp?arnumber=5342376](http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5342376)> accessed 29 March 2012.

<sup>161</sup> Swalwell and Davidson.

<sup>162</sup> Ibid. Ibid.

<sup>163</sup> James Sumner, "'Today, Computers Should Interest Everybody' The Meanings of Microcomputers' (2012) 9 *Studies in Contemporary History* 307 <<http://www.zeithistorische-forschungen.de/2-2012/id=4725>>.

different countries, comparing the UK and US.<sup>164</sup> The central role of enthusiasts and hobbyist culture to game development of this era is also often overlooked. In the US, despite the popularity of some microcomputers, micro games rarely feature in histories of the era, dismissed as a hobbyist market and not part of the ‘real’ business of videogames.<sup>165</sup> Local game histories can query what history is being told and whose history is being omitted. Local game histories, in their challenge to unmask universal narratives, are what Suominen describes as “emancipatory history” – historiography that seeks to provide alternative perspectives. They reject the master narratives of progress and catalogues of ‘bests’ and ‘firsts’ and attempt to raise awareness that “various historical events, processes, societal forces, and ideologies” produce videogame history.<sup>166</sup>

Recognition that the centrist tale of videogame development has overlooked the industries of other countries has resulted in a number of recent publications to address the oversight. Many of the contributions to these scholarly collections are themselves chronicles, historical surveys of local development.<sup>167</sup> With the exception of Swalwell’s studies of microcomputing in Australia<sup>168</sup>, Australian 1980’s game history is an area that has received little critical analysis. UK author Tristan Donovan’s 2010 book *Replay* offers a more global history of the 1980s, including celebrating the rise of the British Sinclair Spectrum and the home computer revolution

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<sup>164</sup> Ibid.

<sup>165</sup> Kline, Dyer-Witheford and De Peuter. 142

<sup>166</sup> Suominen, ‘How to Present the History of Digital Games.’ 7

<sup>167</sup> Mark JP Wolf (ed), *The Video Game Explosion* (Greenwood Press 2008); Mark J. Wolf (ed), *Videogames Around the World* (MIT Press 2104); Peter Zackariasson and Timothy L Wilson (eds), *The Videogame Industry: Formation, Present State, and Future* (Routledge 2012).

<sup>168</sup> Melanie Swalwell, ‘Questions of Microcomputers’ Usefulness in 1980s Australia’ (2012) 143 Media International Australia 63.

in Europe.<sup>169</sup> He gestures toward there being national aesthetics for microcomputer game development cultures in the UK, France and Germany. Despite acknowledging Australian company Melbourne House, an important name in the UK scene, and recognising that Australia developed games, the budding antipodean industry does not receive any real attention in his study.<sup>170</sup>

### 2.3.2 Australian Game History

What even constitutes an 'Australian game' can be complicated. Some well-known and more recent games, otherwise outside the scope of the thesis, illustrate this point. The award-winning *Bioshock* (2007), co-created between Irrationals' Boston and Canberra studios<sup>171</sup> is not considered 'Australian' but is associated with its North American lead designer. *Medieval Total War II* (2006), developed in Brisbane at Creative Assembly's studio, is also often overlooked as the Total War series has an established legacy from elsewhere.<sup>172</sup> The popular Quake mod *Team Fortress* was created in Melbourne by a group of young Australian modders, whose core team was then hired by Valve Software in the US. Despite its Australian origins, *Team Fortress* is not thought of as an Australian game. Ports and remakes are rarely acknowledged. Australia has been the source of some important ports from Beam Software's highly accomplished *Super Smash TV* (1992) for the SNES to Krome's *Star Wars: The Force Unleashed* (2008) for the Wii. Often these conversions are very technically challenging, particularly when developers are dealing with inferior or more limited platforms. They may even be, as in the case of Krome's 'Star Wars' iteration, the most critically acclaimed version of that game.

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<sup>169</sup> Tristan Donovan, *Replay: The History of Video Games* (Yellow Ant 2010).

<sup>170</sup> Ibid.

<sup>171</sup> Now defunct, 2K/ Irrational Canberra closed its doors in 2015.

<sup>172</sup> Jason Hill, 'Best Australian Games' (*Screenplay Blog, The Age.com.au*, 2008) 4  
<<http://blogs.theage.com.au/screenplay/archives/008448.html#>> accessed 20 May 2013.

The classification of videogames in Australia has received more attention than perhaps any other areas of Australian videogame history.<sup>173</sup> Tom Apperley identified this as a narrative for Australian videogame history in a number of international Game Studies compilations.<sup>174</sup> Following the banning of *Grand Theft Auto III* in 2001, Mark Finn examined the absence of an adult classification for Australian videogames (1995 – 2012), and the decisions of the Office of Film and Literature Classification to ban specific videogames, in the context of the classification of other media. Finn reflects on the cultural perception of videogames in relation to the 1995 amendment to the Australian Classification Act, with its expressed concerns regarding interactivity as inherently more problematic than linear screen content. In his study, Jens Schröder presents a comparison between Australian and German approaches to videogame classification.<sup>175</sup> As there was no classification system for videogames in Australia until the 1995 Act, questions of classification are outside the scope of the thesis.

The timeline produced by the Game Developers Association of Australia in 2004 is the first comprehensive mapping of Australia's thirty years of commercial game development.<sup>176</sup> Scott Knight and Jeffrey Brand's 2008 history for ACMI built upon this and placed it in a more public

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<sup>173</sup> Mark Finn, 'Political Interface: The Banning of GTA3 in Australia' in Nate Garrelts (ed), *The meaning and culture of Grand Theft Auto: critical essays* (McFarland 2006); Mark Finn, 'GTA3 and the Politics of Interactive Aesthetics' (2003) 4 Communications Law Bulletin 6 <papers2://publication/uuid/2D9E2E6A-2E41-4A02-B8C5-19F91C62A64A>; Thomas Apperley, 'Videogames in Australia' in Mark J Wolf (ed), *The Videogame Explosion: A History from Pong to Playstation and Beyond* (Greenwood Press 2008); Jens Schröder, "'Killer Games" versus "We Will Fund Violence": The Perception of Digital Games and Mass Media in Germany and Australia' (Konrad Wolf' Potsdam-Babelsberg 2010); Thomas Apperley and Daniel Golding, 'Australia' in Mark J. Wolf (ed), *Video Games Around the World* (MIT Press 2015); Hinton.

<sup>174</sup> Apperley; Apperley and Golding.

<sup>175</sup> Schröder.

<sup>176</sup> The GDAA Melbourne timeline was created for international use and as a tool for lobbying government. It was available as a pdf download from their website and also printed on the walls of their Melbourne offices. Its focus leaned toward members of the GDAA.

domain through ACMI's website.<sup>177</sup> Knight and Brands' survey is divided across three periods, with the early period from 1978 to 1992 documenting the arrival of the home computer.<sup>178</sup> It starts from the founding of Melbourne House in 1978, which at the time existed solely as a book publisher. Melbourne House did not publish their first videogame until 1982. The end date of 1992 allows for the founding of John Passfield's first company, Interactive Binary Illusions, marking his shift from creative hobbyist to commercial developer. Sam Hinton notes, in a 2008 study of the Australian industry, that this era of development focused on low-cost hardware and uncomplicated computer systems. This allowed local development to be carried out for little investment. He characterizes this era of game development as a garage industry.<sup>179</sup>

Hinton locates the turning point for the Australian industry expansion in the mid-1990s, characterized by a flurry of start-ups and the establishment of local studios by international developers such as Irrational Games, Pandemic and Creative Assembly. Hinton notes many of these start-ups were possible due to the training of a second wave of developers at first generation companies such as Beam Software/Melbourne House. He cites Sourì's family tree of Australian game developers from the Sumea (now Tsume) website (Figure 2).<sup>180</sup> The conditions that made this sudden flurry of activity possible, including the favourable exchange rate for the

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<sup>177</sup> This work was funded by Multimedia Victoria and commissioned and edited by Helen Stuckey for ACMI. Scott Knight and Jeffrey E Brand, 'History of Game Development in Australia' (*Australian Centre of the Moving Image*, 2008) 8 <[http://www.acmi.net.au/explore\\_history\\_oz\\_game.htm](http://www.acmi.net.au/explore_history_oz_game.htm)> accessed 12 February 2012; Scott Knight and Jeffrey E Brand, 'Timeline of Game Development in Australia' (*Australian Centre of the Moving Image*, 2008) <[http://www.acmi.net.au/global/docs/games\\_timeline\\_australia.pdf](http://www.acmi.net.au/global/docs/games_timeline_australia.pdf)> accessed 12 February 2012. Following the redesign of the website in 2015, the documents are no longer visible on the site.

<sup>178</sup> Australia did not have a local arcade design industry.

<sup>179</sup> Sam Hinton, "Gaming Nation: The Australian Game Development Industry" in Larrissa Hjorth and Dean Chan (eds), *Gaming Cultures and Place in the Asia-Pacific region* (Routledge 2009).

<sup>180</sup> Sourì was inspired to create this diagram after hearing Fred Milgrom's speech at the launch of the exhibition *Hits of the 80s* at ACMI. Sourì, 'Origins of Australian Game Developers' (*Tsume: Australian and New Zealand Games Development*, 2008) 1 <<http://www.tsume.com/australasia/australia/news/210708/origins-of-australian-game-developers>> accessed 17 July 2014.



Australian dollar, are not discussed. Also absent is acknowledgement of the roles played by individuals who had left to work in the global industry and later returned as experienced industry leaders, bringing major studios to Australia.<sup>181</sup> This lack of analysis makes it look like the local industry naturally progresses and grows over time, whereas it was influenced and, in turn, was influential internationally.

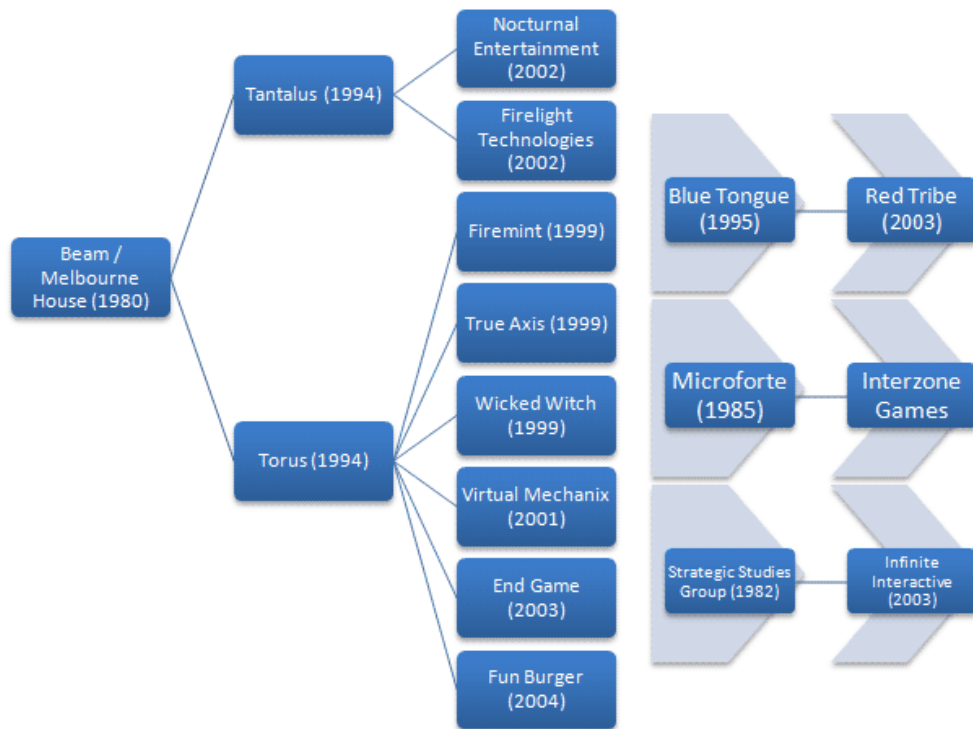


Figure 2: Origins of Australian Game Developers, from Sumea, 2008 (detail)

Australian developers see themselves as players in an international community.<sup>182</sup> Despite Australia's proximity to Asia, Hinton identifies how

<sup>181</sup> One of the original founders of Irrational Studios (1997) was Australian expat Jonathan Chey. Chey had worked at Looking Glass Studio in the US with his Irrational co-founders Ken Levine and Robert Fermier. In 2000 Chey returned to his home town, Canberra, and the company established Irrational Canberra which shared game design projects with the company's Boston Studio. Pandemic's Australian studio was another example of a local studio created by expats wishing to return to Australia.

<sup>182</sup> Knight and Brand, "History of Game Development in Australia"; Hinton, "Gaming Nation: The Australian Game Development Industry"; Christian McCrea, "Australian Video Games: The Collapse and Reconstruction of an Industry," in *Gaming Globally: Production, Play, and Place*, ed. Nina. B Huntemann and Ben Aslinger (Palgrave Macmillan, 2012), 203–207.

factors such as language and cultural differences mean that industry continues to focus on western markets. The distance from the major publishers of North America and Europe is presented as a serious barrier for attracting work. Australia's geographic isolation is compounded by other factors including scarcity of venture capital, the size of the population being too small to sustain a local market, and, creating further stress for the expanding industry, a skills shortage.<sup>183</sup>

The ascendance of the 'work for hire' model in the 1990s and its dominance until 2009 is analysed by Hinton and, later, Christian McCrea.<sup>184</sup> McCrea presents a critical understanding of the factors governing the rise and fall of this model. Both regard it as a period that constrained the local industry's opportunities for creative innovation and financial reward. In 2012, when McCrea was writing, the work for hire model had collapsed and with it the majority of Australian studios. The Global Financial Crisis, the high Australian dollar, and changes to game production, including a new console cycle and the end of a market for second tier games, had destroyed the business model. McCrea credits many Australian studios as co-authors of their own demise, with poor business practices and weak projects. Issues with Australian games work practice are also addressed by Apperley and Golding in their survey history of the Australian industry, in which they highlight the media attention attracted by the working conditions at Team Bondi's studio for the creation of *LA Noire* (2011).

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<sup>183</sup> Hinton.

<sup>184</sup> Christian McCrea, "Australian Video Games: The Collapse and Reconstruction of an Industry" in Nina B Huntemann and Ben Aslinger (eds), *Gaming Globally: Production, Play, and Place* (Palgrave Macmillan 2012).

In contrast to the annihilation of the industry that McCrea described in 2012, just four years earlier, in 2008, Knight and Brand presented the Australian industry as a mature industry, diverse in its creative ambitions and valued by government. (Commissioned for the 2008 Game On exhibition, the tone of the text is informational rather than analytical.) The rapid demise of the local industry is a reminder of how volatile the technology driven industry is. Writing in 2009, Hinton is more cautious regarding the future of the Australian games industry, seeing possibilities in how the new middleware technologies and online delivery can assist Australian developers with their remoteness, but concerned with how global economic changes will impact on the fragile industry's reliance on fee-for-service.

In the wake of the destruction of the previous industrial model of game production in Australia, McCrea looks to the commercial and critical success of Australian studios Firemint and Halfbrick in developing successful IP in the growing mobile and IOS territory.<sup>185</sup> His attention, however, is also focused on reminding us of Australia's history of artistic game design and the vibrancy of the local indie scene. Australia's artistic independent games have received particular attention both locally and internationally, perhaps, as McCrea suggests, for their politicized focus and creative expression. In an interview with independent game developers Julian Oliver and Kipper (Katharine Neil) in 2002, Swalwell documents the very oppositional position these developers feel that the industry holds to their work and the challenges for both in finding financial support and an

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<sup>185</sup> Firemint was purchased by publishers EA in 2011, which later purchased Iron Monkey, both highly acclaimed creators of AAA licenced mobile titles. The two studios were merged in 2012 to become Fire Monkey reportedly at the wish of studio CEO's Rob Murray and Tony Lay. Laura Parker, 'EA Merges Firemint and Iron Monkey to Form New Studio' (*Gamespot*, 2012) <<http://www.gamespot.com/articles/ea-merges-firemint-and-iron-monkey-to-form-new-studio/1100-6388352/>> accessed 17 July 2014.

audience for their work.<sup>186</sup> These are issues that McCrea suggests are less pertinent in 2012. He sees a new aesthetic and creative environment asserting itself to fill the gap left by the collapse of the 'work for hire' studio system.

With the exception of John Banks' studies of Auran's relationship with their creative community and the analysis of independent games such as *Escape from Woomera* and the work of Selectparks, the dominant theme expressed in the writing on Australia's industry seems to reflect Hinton's observation that "what is remarkable about the Australian games industry is that it exists at all".<sup>187</sup> Knight and Brand's history is designed to inform audiences of *Game On* that Australia has a game history. Hinton and McCrea both present a history of an industry defined through its relationship to the centre and its dependence on the big publishers. McCrea, however, sees the demise of 'work for hire' as an opportunity to sever that relationship, arguing that, despite the apparent death of the Australian Industry in 2012, for the first time since the 1980s the "relative quality and market successes" of Australian games "are changing the long-running perception of industrial oblivion".<sup>188</sup>

In contrast to this more recent history, the 1980s is seen as one of the most heroic and successful eras of Australian videogame development history. This is due to Beam's critically acclaimed games and Melbourne House's standing as a publisher, the innovations of Strategic Studies Group, and the birth of Micro Forte. This important period in Australian game history is worthy of preservation and critical analysis. It provides a

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<sup>186</sup> Melanie Swalwell, 'Independent Game Development: Two Views from Australia' in Grethe Mitchell and Andy Clarke (eds), *Videogames and Art* (Intellect 2007).

<sup>187</sup> Hinton.55

<sup>188</sup> McCrea.205

relevant opportunity to explore the thesis question: how can the significance and complexity of videogames be documented and displayed and what can museums learn from and how best work with online communities in documenting and displaying game history?



## History Part I: Melbourne House and Beam Software

### 3.1 Overview

The previous chapter laid a path through some of the important issues for the display and collection of videogames by museums. I focused not on issues of software preservation, but the need to capture the multiple facets of game culture and the experiences of historical games as played. I observed that this knowledge sits with those who played videogames at the time. The importance placed on working with community and the implementation of a collective approach to game preservation, both internationally and locally, was recognized as a central theme in preservation discourse. I identified the need for models of how institutions could work effectively to accept contributions from gamer communities. In surveying the literature on the history of games in Australia it was revealed that little has been written about Australia's game development industry of the 1980s. I proposed the importance of local game histories to provide alternative and enriching perspectives on videogame history.

In response to the demands for a need for a local history, this chapter presents a history of Australian developers Beam Software and their parent company, publishers Melbourne House. I explore the origins of Melbourne House in art house publishing, investigating how the company's genesis was not within the story of computing, but rose from an impassioned desire to support Australian artistic expression. I explain how the establishment of Melbourne House is a product of Australia's colonial identity. I also address the importance of Melbourne House's DIY computer books, asserting that they cannot be simply dismissed as a pathway to the 'real' activity of game development but are culturally significant in their own right. I argue that these hobbyist DIY publications and their popularity help provide a critical understanding of a creative user culture of the era and the national preferences of different microcomputing communities.



There are many people who, despite their significant contributions to games of the era, remain virtually invisible in game history. The work of tool-makers is often uncredited and is, therefore, less celebrated than those who worked directly on the games by both scholars and retro gamer sites. Despite their enormous contribution, Beam's tool-makers are in danger of being forgotten. Exploring what and who has been left out of games history, I examine the case of Veronika Megler, co-designer of *The Hobbit*, and ask whether her diminished accreditation for the popular game can be attributed to expediency or to gender.

The final part of this chapter recounts the impact of the changes in the game development industry at the end of the decade. The sale of Melbourne House in 1987 ended Beam Software's autonomy and shifted its market focus from the UK to North America. In 1988 Beam Software's Australian identity once more comes into play regarding the question of geography. Poised to be a player in the new Nintendo-shaped world, the tyranny of distance once more determined their fate. Beam's new status as a work for hire studio provided the model for a majority of Australian game studios for the next twenty years.<sup>189</sup> I discuss the tiny company's conflict with Nintendo and how Nintendo changed Beam's culture. Beam's story presents a narrative of the changing landscape of game development and the company's work on the ill-fated Power Glove debunks the narrative of technology's continuous progress. Beam's story demonstrates more than just 'hits of the 80s'; there are also stories of failure and resilience. The chapter offers a case study that is, in part, a chronicle, a form derided by Erkki Huhtamo for its tendency to lack critical reflection.<sup>190</sup> In

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<sup>189</sup> There is always the exception, and SSG continued to retain its independence as a developer and publisher, although its market of computer gamers shifted in the 1990s from the mainstream to the niche. In the early 1990s they were, however, riding high on the success of *Warlords* and its sequels.

<sup>190</sup> Huhtamo.

my research, however, I use issues of the local game development history to question assumptions regarding the construction of videogame history. In addition, I examine the methods for researching recent history and how they inform the discourses of videogame history.

## 3.2 Methods

This chapter explores some of the challenges of researching game history on the periphery. Addressing the paucity of published scholarly material and archival accounts, it draws on oral history derived from interviews conducted in 2006 with Alfred Milgrom and other Beam Staff from the 1980s as research for the *Hits of the 80s* exhibition, and from further interviews conducted in 2012 and 2013 for the Play it Again Project. In addition, information from online archives created for retro gamer sites is consulted. Anthony Guter's personal online memoir of Mastertronic's history is also referenced, as is historian James Maher's online game history blog on the 1980s, the Digital Antiquarian. Both are important examples of significant online resources created by individuals.<sup>191</sup>

### 3.2.1 Issues of Identity in Recent History

The confusing identities of Beam Software and Melbourne House are an issue that serves to illustrate some of the challenges of researching game history. Over the decades, the companies had been sold, traded and rebranded several times. Publishing company Melbourne House was sold in 1987, but the name was reacquired in 1996 by Beam, which itself was then known as Beam International. This meant that, although in the 1980s Beam Software began as a subsidiary of Melbourne House, in the 1990s Melbourne House was a division of Beam International Limited. The

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<sup>191</sup> Anthony Guter, 'A History of Mastertronic' (*Guter.org*, 2013) 1  
<<http://www.aguter.plus.com/mastertronic/>> accessed 19 December 2013. Jimmy Maher, *The Digital Antiquarian*, 2011-, <http://www.filfre.net/>.

confusion was not confined to this period and there are many challenges in identifying work from the 1980s. The publishing company Melbourne House (with its back catalogue of Beam games) was sold to Mastertronic in 1987, and a number of Beam games were re/published as Mastertronic budget games. Mastertronic also published a number of other developers under the Melbourne House brand as their prestige label. In 1989 Virgin Software purchased Mastertronic and the brand was shutdown. To add to this confusion, not all of Melbourne House's games of the early 1980s were made by Beam Software, many were the work of small UK developers, nor were Beam Software's early games published exclusively by Melbourne House. Psion, for example, published Beam's iconic Horace games (1982-85).<sup>192</sup>

In 2006 Guy Bloomberg, an editor at AustralianGamer site, posted on the Australian and New Zealand game development portal Sumea, seeking clarification on the relationship between the companies Melbourne House and Beam Software for an article on the Top Ten Australian Games.<sup>193</sup> Although the studio existed at this time as Atari Melbourne House, its history had all but been erased within the public domain. Sumea creator, Sourì, came to the rescue with some pages from Beam's website he had harvested before the site was taken down in 1999, when the company was acquired by the French publishers Infogrames. He reposted these on Sumea's website. They included a brief company history, timeline,

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<sup>192</sup> The Horace games came packaged with Sinclair Spectrum though Psion's relationship with Sinclair Research. Psion was a UK company founded by Dr David Potter. Melbourne House, still operating as a book publisher in 1982, sent a copy of William Tang's *Hungry Horace* to Psion in the UK who were soliciting for games by home coders. According to Potter, Psion liked the game so they improved Tang's code created some artwork for it packaged it up and marketed it. Magnus Anderson and Rebecca Levene, *Grand Thieves & Tomb Raiders: How British Video Games Conquered the World* (ArumPress 2012) 73.

<sup>193</sup> Sourì created Sumea (Tsume) site in the absence of any formal industry portal, driven by his own passion and fascination for games development in Australia. Yug's post on Sumea 'Beam Software / Melbourne House' (*Tsume: Australian and New Zealand Games Development*, 2006) <<http://www.tsume.com/node/3460>> accessed 9 April 2014.

information on key staff and directors and a number of press releases from that period.<sup>194</sup> The survival of these pages demonstrates how fans execute critical archival work, displaying an understanding of the value and vulnerability of digital artefacts. Whilst a dedicated researcher who knew the original “http://URL” could find these pages on the Wayback Machine, Souri’s efforts importantly made them visible to the local community.<sup>195</sup> His efforts help keep Beam’s history alive in an industry that is fixated on the future and discards its past.<sup>196</sup>

### 3.2.2 The Back Catalogue

There are no corporate records to provide a complete list of games that Beam Software created in the 1980s. For the 2006 ACMI exhibition, *Hits of the 80s* in 2006, and for this research, it was necessary to re-construct Beam Software’s 1980s back catalogue. There are no archives for Beam Software and this information was not available through any single source.<sup>197</sup> Research was initially conducted by searching retro games sites. The online resources formed an uneven base of reference, as some sites, such as World of Spectrum, are rigorous and methodical, yielding valuable and trustworthy information, whilst others are more haphazard and their data unreliable. Fan archives also provided access to traditional documentation such as scanned copies of Melbourne House’s mail order catalogues,

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<sup>194</sup> The site’s later reboot as Tsumeia includes most of the Beam site of 1999 and those of Melbourne House as provided to Souri by ex-Beam Games and Network Programmer Richard Crane. Crane had saved copies of both websites, which were added to Tsumeia in November 2012. They include a list of some of Beam’s 1980s titles for the Spectrum, C64 and Amstrad CPC as available to download, with handy emulator links. Sadly none of these links’ destinations exist anymore.

<sup>195</sup> Souri’s efforts ensured the survival of this information. Copies of Beams website from 1997 onwards can be found on the Internet Archives Wayback Machine. No copies exist in Australia’s cultural website project, Pandora.

<sup>196</sup> James Newman, *Best Before: Videogames, Supersession and Obsolescence* (Routledge 2012); Stephen Kline, Nick Dyer-Witheford and Greig De Peuter, *Digital Play: The Interaction of Technology, Culture and Marketing* (Grieg De Peuter ed, McGill-Queen’s University Press 2003) .

<sup>197</sup> In 2010 Matt Keller created the Australian Games Database. It forms part of his Retro Gaming Australia site and offers the first available list of games published in Australia (and New Zealand). It is an invaluable resource and whilst it may not yet be complete or error free, its ambition is to be.  
<http://www.retrogamingaus.com/>

magazine reviews and articles. All of these fragments were used to try to generate a list of Beam Software works.

Determining which games Beam Software created for Melbourne House was a confusing process; games tend to be identified by their publisher both on retro game sites and in the reviews of the era. Melbourne House published games by a number of other developers, some Australian, many British. Before its sale in 1987, Melbourne House published games in Australia, UK, Europe and America.<sup>198</sup> There are different licences associated with the different territories. For example Melbourne House distributed UK developer and publisher Anirog Software's games in Australia and American Scott Adam's Adventureland games in the UK. It did not have a licence to publish *The Hobbit* in the US and educational publishers Addison Wesley distributed the game there. Some of the earliest cassette releases such as the 'Gamestape' series for the ZX81 and TS1000 were only available in the US.<sup>199</sup> Beam Software games were occasionally published in different regions under different titles; Commodore 64 games *Street Hassle* (1987) got US releases as both *Bob'n Rumble* (1987) and *Bad Street Brawler* (1988). To further complicate the mix, game listings that were published in Melbourne House books were sometimes also released on cassette as software. These were simple programs and puzzle games, generic arcade clones or basic text adventures that fall somewhere between hobbyists' DIY-code and published game software.

The multiple identities of both Melbourne House and the games in different markets illustrate some the difficulties facing researchers. The complexity of factors shaping the industry such as publishing constraints

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<sup>198</sup> After its sale in 1987, Mastertronic published a boutique line of games including works by Psygnosis under the Melbourne House label before the label was sold to Virgin.

<sup>199</sup> 'Melbourne House Presents - Computer Books and Software' (Melbourne House 1983).

and opportunities, hardware popularity, and licensing agreements are both local and international in their scope. The story of Australia's games industry cannot be told in isolation from the greater story of games of this era. The global and local are interwoven.

### 3.2.3 Oral History

Interviews with Beam staff from the 1980s formed the other principal part of the research. As is so often the case with doing research into commercial companies, access to records of product listings, sales figures and other key data was not available. This information is either locked down by commercial confidentiality, or disregarded and lost when companies changed hands and people moved on. Information about games collected from retro game sites was crosschecked with original Beam staff to determine its veracity. This was not an exact process. People could not necessarily remember the details of games from thirty years ago and different teams worked on versions for different platforms. Popular games like *The Hobbit* were ported to nine or more platforms and many Beam staffers worked on various iterations of the game. [This issue is discussed in more detail in Chapter 5]. In 2014 Antony Guter, Financial Controller at Mastertronic 1985 – 1991 provided me with a list of Mastertronic sales figures from 1986 – 1991. His spreadsheet provided a definitive list of the game titles that Melbourne House owned rights to in 1987 for the UK and Europe. It also reveals which games on which platforms were popular in those years. A list of titles and numbers, it provides no enlightenment on which games were produced by Beam, or who the team members were who worked on them.

Oral history has formed a principal means of capturing the stories of the production of 1980's games. Despite criticism of oral history's dependence on personal memories, considered to be notoriously subject to nostalgia,<sup>200</sup> developer interviews are a central tenet of most international preservation projects.<sup>201</sup> Historian Alessandro Portelli proposes that the subjectivity of oral history is part of its value as history, for it shows how people make sense of the past. In his research, Portelli examines the interplay between oral history and written records. The relationship between the two exposes details of influence, ideology and the personal in the construction of historical narratives. The subjectivity of oral histories, Portelli argues, is actually their strength as it provides a history that looks "beyond facts to their meanings".<sup>202</sup> Oral history allows a type of engagement that moves beyond the established details to articulate societal and personal responses. Agency is critical to the history of videogames and "oral history reminds us that the history of computers is not just about computers but the interactions between computers and people".<sup>203</sup> For the curator, the real voices of oral history help audiences make an emotional connection with artefacts on display. Personal stories infuse objects with meaning.<sup>204</sup> Beam's creative teams' memories of wrestling with the technology constraints of the era enliven the technical detail of their accomplishments. These personal anecdotes, redolent with a sense of accomplishment, don't require the audience to understand the technology to grasp the achievement.

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<sup>200</sup> Alessandro Portelli, 'What Makes Oral History Different' in Robert Perks and Alistair Thomson (eds), *The Oral History Reader* (Routledge 1998); Thomas Lean, 'The Voice in the Machine: Oral History and Making the Computer Relevant' in Arthur Tatnall, Tilley Blyth and Roger Johnson (eds), *Making the History of Computing Relevant* (Springer Berlin 2013).

<sup>201</sup> These include the British National Videogame Archive, ICHEG, The British Library and the American Computer Museum.

<sup>202</sup> Alessandro Portelli, *The Death of Luigi Trastulli and Other Stories: Form and Meaning in Oral History* (State University of New York 1991).2

<sup>203</sup> Lean.p172

<sup>204</sup> Jennifer De La Cruz, 'Collecting Oral Histories: It Takes a Village (or a Museum)' (*Computer History Museum*, 2013) <<http://www.computerhistory.org/atchm/collecting-oral-histories-it-takes-a-village-or-a-museum/>>.

## 3.3 Colonial Artists

### 3.3.1 Beginnings

“If you knew games at all, if you bought games, inevitably you were going to buy a Beam game.” Bill McIntosh<sup>205</sup>

The ‘tyranny of distance’ is the famous phrase historian Geoffrey Blainey used in 1966 to describe how Australia’s geographical remoteness has shaped the nation’s history. The country had been understood as a British colonial outpost on the far side of the planet. Whilst such a legacy would seem hardly germane in the 1980s, Australia’s colonial roots played a seminal role in the beginnings of the Australian game industry. A fact caused by Australian publishing rights still being linked to the British administrative structure.<sup>206</sup>

In 1978, Alfred Milgrom and Naomi Besen established Melbourne House as a UK registered book-publishing company. The UK identity offered the advantage of acquiring publishing rights for both the UK and Australian markets for the same cost. In 1980 Melbourne House published their first ‘home coding’ book for the recently released Sinclair ZX80 microcomputer, *30 Programs for the Sinclair ZX80*, and found themselves forerunners in the brand new area of computer book publishing. They soon found they had a need for coders to write their microcomputer hobbyist books and so founded Beam Software.<sup>207</sup> The first office was in their Melbourne living room and they employed students from the nearby University of Melbourne. Recognising the advantages of publishing the code both as

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<sup>205</sup> Bill McIntosh Interview 26 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>206</sup> Helen Stuckey, ‘Australian Pioneers – Melbourne House and the Tyranny of Distance’ (*Play it Again Project*, 2013) <<http://playitagainproject.org/australian-pioneers-melbourne-house-and-the-tyranny-of-distance-3/>> accessed 17 October 2014.

<sup>207</sup> Beam Software’s name was an amalgam of Milgrom and Besen’s initials and its establishment coincided with their return to live in Australia.



“how-to-books” and as software, Beam quickly moved into publishing software and began to create original games for the Spectrum before expanding later to other platforms. The success of the graphic text adventure *The Hobbit* helped establish Melbourne House as a major player in the UK and European markets in the early 1980s. According to the *Australian Business Review Weekly*, in 1984 they owned 10% of the \$30-\$35 million British games market. The *BRW*’s article on Melbourne House reports that British sales accounted for 70-80% of the company’s 1984 turnover and the company consistently had three or four games in the “Top30” games sales.<sup>208</sup>

### 3.3.1 Outback Press

Telling Australian stories has been one of the tenets that ensure the survival, significance and celebration of local screen culture. Australia’s first videogame development company evolved from an enterprise dedicated to making Australian voices heard. Alfred Milgrom was originally part of the four-person team behind Outback Press. The publishing company Outback Press was founded in 1973 by Milgrom (a post grad science student), Morry Schwartz (an architecture drop-out and budding entrepreneur), Colin Talbot (a journalist and novelist) and Mark Gillespie (an architect and musician).

Their aim was to publish local writers whose work was, at the time, marginalised by the predominantly UK-owned and based publishing companies who controlled book publishing in Australia.<sup>209</sup> Milgrom states that Outback Press wanted to publish Australian literature that was not bound by British outlooks. They published Australian artists, poets, and

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<sup>208</sup> Peter Stirling, ‘Small Is Big in the Software Industry’ [1984] *Business Review Weekly* 11.

<sup>209</sup> ‘Outback Press’ (*AustLit*)

<<http://www.austlit.edu.au/austlit/page/A37086?mainTabTemplate=agentDefault>> accessed 17 April 2014.

emerging writers, including the first anthology of Australian women's poetry, *Mother I am Rooted*, edited by Kate Jennings. Some of their other significant Australian authors included poet Morris Lurie, novelist Elizabeth Jolley and the photographer Carol Jerrems.<sup>210</sup> Milgrom recalls that they came very close to signing the young Peter Carey, now famous as a two-time winner of the Booker prize.<sup>211</sup>



Figure 3; 'Outback Press Melbourne,' 1974. Image by Carol Jerrems, Left to right: Colin Talbot, Alfred Milgrom, Morry Schwartz, Mark Gillespie. Courtesy of National Gallery of Australia

Good looking and youthful, the Outback Press publishing team were part of Melbourne's bohemian local literary, theatre and music scene. All, except Milgrom, lived in the company's Gore Street offices in Fitzroy, made infamous by their lively parties. Tales of Outback Press suggest that these were halcyon days of passions of all sorts, including a shared love of art and literature. Despite the early bonhomie, Milgrom remembers that the

<sup>210</sup> James Button, 'The Art of the Deal' 103 *The Age* (Melbourne, 21 March 2004) <<http://www.theage.com.au/articles/2004/03/21/1079823222407.html?from=storyrhs>>.

<sup>211</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel

pressures of publishing as a small company were quite intense and, in 1976, the four youthful publishers parted ways.<sup>212</sup>

Schwartz and Milgrom continued with Outback Press, they had a plan to capitalise on the changes to Australia's publishing law initiated in mid-1976. Australian publishing post-war was constrained by the Traditional Market Agreement; an agreement that divided the English-speaking world between American and British publishers and gave the British privileged access to the Australian market. Under the agreement, British publishers immediately obtained rights to Australia when acquiring UK rights from an American publisher. American publishers could not sell local rights to an Australian publisher if a British publisher held the rights, even if the UK publisher was not distributing the work in Australia. Nor could an Australian-owned company acquire separate rights to any British originated books. These laws severely constrained the options for Australian publishers. Australian publishers rallied against the restrictive laws. In the early 1970s, an anti-trust case was taken by a group of American publishers to the US Department of Justice against the Traditional Market Agreement, forcing it to be officially abandoned in 1976.<sup>213</sup>

With the official end of the Traditional Market Agreement, Outback Press saw an opportunity to get book rights directly from the US. Schwartz travelled to America to negotiate Australian rights to American titles. Outback Press acquired rights to new works of American literature and

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<sup>212</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel. The split of Outback Press with Gillespie and Talbot was acrimonious. Morry Schwatz, 'Case Study: Inner-Urban & Outback' in Craig Munro and Robyn Sheahan (eds), *Paper Empires: A history of the book in Australia 1946-2005* (2006).

<sup>213</sup> American publishers took the antitrust case in conjunction with agitating by Australian publishers. Craig Munro and Robyn Sheahan-Bright (eds), *Paper Empires: A History of the Book in Australia 1946 - 2005* (University of Queensland Press 2006).

also to profitable popular self-help books such as *The Pritikin Diet*. In 1978, when it was Milgrom's turn to travel to the US to acquire new titles, he discovered that American publishers were still reluctant to sell *just* the Australian rights to their titles as it made it difficult to sell the rights to Britain and the rest of the British Commonwealth.<sup>214</sup> Despite the formal prohibition of the old Agreement coupling Australian rights to the UK market, British book publishing companies did not want to purchase the contracts to titles without also having rights to the Australian market. Milgrom thought it would be sensible to start a British publishing company. This would allow the purchase of rights to both the British and Australian markets for the same cost. After completing his American tour for Outback Press, Milgrom moved to London with marketing specialist Naomi Besen, his wife, and together they founded Melbourne House as a UK registered book-publishing company.<sup>215</sup>

### 3.3.2 Melbourne House

Melbourne House began by licencing American titles for both the UK and Australian markets. Their first publications in 1978 included the novel *Appalachee Red* by African American novelist Raymond Andrews. The dark satire, set in the imaginary small town Muskhogean in America's Deep South, won the James Baldwin prize for literature. Aware of how profitable self-help books had been for Outback Press, they also published titles such as *The Complete Book of Walking*.

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<sup>214</sup> Schwartz returned to Australia at the end of 1977 and Milgrom took over negotiations in the US. Milgrom joked that Morry Schwartz must have been a better negotiator than him as he could not get US publishers to cut deals just for Australia, inspiring him to establish Melbourne House. Alfred Milgrom Interview 28 April 2006

<sup>215</sup> Outback Press closed in 1980. Schwartz had just overseen an expensive court battle with the Australian cricket Captain Graeme Yallop on the publication of his memoirs and, despite Outback Press's victory, the company had taken a financial hit. Milgrom and Schwartz parted ways. Now based in London, Besen and Milgrom focused their energy on Melbourne House. In 1980, Morry Schwartz founded a new company Schwartz Publishing, which continues to this day as Black Inc., whose publications include two of Australia's most prestigious intellectual and literary publications *Quarterly Essays* and *The Monthly*. Michael Heyward of Text Publishing thinks *Quarterly Essays* has "changed the equation for the way issues of importance are written about and discussed in Australia" ..

Milgrom claims his inspiration to write a computing book came from a 1980 article in *The Australian Financial Review* that touched on the need for how-to programming books for home computers. Milgrom, a science graduate from the University of Melbourne, was a keen programmer, having enjoyed working on the university's Control Data Corp Cyber 'supercomputer' and IBM 360 for his PhD studies. He immediately saw the potential for home computer books and, upon the announcement of the launch of the affordable home computer the Sinclair ZX80 in the UK, he decided to write and publish his own book, *30 Programs for the Sinclair ZX80* (1980), for that market.<sup>216</sup>

Britain's homegrown Sinclair ZX80 was inexpensive and could be plugged into an ordinary TV monitor. It was a very basic machine that did not come with either software or a programming guide. Melbourne House's *30 Programs for the Sinclair ZX80* was published in September 1980, just a few months after the ZX80 was released. It came with an endorsement from Clive Sinclair himself on the cover. To acquire the endorsement Besen sent a copy of the book to inventor Clive Sinclair, then proceeded to call his office every day for comment until Sinclair finally responded telling Besen "yeah, yeah, ....the book's terrific". They splashed Sinclair's commendation across the book's jacket.<sup>217</sup>

In 1980, Melbourne House was still a literary publisher; *30 Programs for the Sinclair ZX80* was their sole computing publication for that year. Notably, two of their other publications for 1980 were the seminal feminist texts *Women Sex and Pornography* by the Australian academic Beatrice Faust, and *Sexual Shakedown: the Sexual Harassment of Women in the Work Place* by

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<sup>216</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>217</sup> Considered one of Australia's Top Business women, Naomi Milgrom won Entrepreneur of the Year in 2014. Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel

American feminist and human rights activist, Lin Farley.<sup>218</sup> These are remarkable companions to find at the birth of an industry that is so profoundly male-oriented. Perhaps it is less surprising, then, that two of Beam Software's first programmers were women. Veronika Megler, designer and programmer of *The Hobbit*, was the second person hired by Milgrom to work at Beam. Her friend Kerryn (surname unknown) was also soon hired to write programs for Melbourne House's books.<sup>219</sup>

Despite the difficulties in getting retailers to stock *30 Programs for the Sinclair ZX80* – retailers had no idea where to put it or who would buy it – the book sold over 6000 copies.<sup>220</sup> On the basis of its success, Milgrom and Besen created Beam Software as they needed staff to develop programs for publication in their computing books. Milgrom quickly realised they could both publish to print and release a software cassette, selling the same work twice.<sup>221</sup> Beam Software is identified as the author of the next two Melbourne House computing titles: *The Complete Sinclair ZX81 Basic Course* and *Machine Language Programming made Simple for your Sinclair & Timex TS1000* published in 1981.<sup>222</sup>

On returning to Australia at the end of 1980, Milgrom hired Melbourne University student William Tang to work with him. Together they wrote a version of *Space Invaders* in machine code for the ZX80. When Milgrom took the game to London to promote it he was greeted with news of the release of the Sinclair ZX81. "This was a very important lesson for us", he

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<sup>218</sup> Melbourne House published *Women, Sex and Pornography* in the UK. Penguin was the Australian publishers.

<sup>219</sup> Veronika Megler, 'There and Back Again: A Case History of Writing "The Hobbit"', *Born Digital & Cultural Heritage* (2014). Megler cannot remember Kerryn's surname. Kerryn frequently partnered with Megler for assignments at University, and they also partnered with two male students Ray (?) and Philip Mitchell who both worked for Melbourne House in 1981. Mitchell joined the company full time on graduating in 1982.

<sup>220</sup> Stirling.

<sup>221</sup> Alfred Milgrom, Interview Transcript 1 March 2013, Provided by Alfred Milgrom

<sup>222</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel

explained, “It made us realise that there was no set life for any particular machine, so the emphasis had to be on trying to develop product for each machine as quickly as possible.”<sup>223</sup> This philosophy was applied to both software development at Beam and to Melbourne House’s book publishing. Melbourne House’s first computer books were for the ZX80 and 81. They published thirty-three books for the Spectrum and guides for the Commodore 64, Vic20, the Amstrad, BBC Micro, Oric, MSX, Atari, Apple II, the 6800 and the Dragon.<sup>224</sup> Having established itself in the UK with 30 *Programs for the Sinclair*, Melbourne House sourced writers from the dedicated UK hobbyist clubs and emerging home computer publications for additional books. Contributors included the teenage brothers Mark and Clifford Ramshaw, and Spectrum developer Dr Ian Logon who worked with Sinclair on the ZX, ZX81, QI and ZX80.<sup>225</sup> In 1982, Melbourne House published their last non-computing text, a thriller set across Australia’s opal mining towns.<sup>226</sup> The company thereafter focused on computing titles such as Ian Logan’s *Sinclair ZX81 ROM Disassembly Part B: 0F55H-1DFFH*. That year they also published William Tang’s popular Horace games, which are iconic in their association with the ZX Spectrum, and, in December, Beam’s big hit, *The Hobbit*.<sup>227</sup>

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<sup>223</sup> Ibid.

<sup>224</sup> In the early 1980s all Beam staff were encouraged to write or edit books. Those who received author credits include William Tang, Gregg Barnett, Bruce Bayley and Andrew Lacey.

<sup>225</sup> Dr Logan worked as a developer of Spectrum Micro Drive. He was a founding member of the Lincoln Computer Club with Douglas Griffith, John Rankin and Theo Roe in 1982.1Chip0Limitz, ‘The Life and Times of Lincoln Computer Club’ (*Lincolnshire Times*, 2013) <<http://www.lincolnshireecho.co.uk/Life-Times-Lincoln-Club/story-20307697-detail/story.html>> accessed 7 April 2014.

<sup>226</sup> Boucher, Bernard (1982) *Opalesque*, Melbourne House,

<sup>227</sup> At one point the Horace games came boxed with the ZX Spectrum, making them many people’s first game.

Melbourne House's computer books cannot be seen as merely a pathway to the 'real' business of software development. For many years book publishing remained a core part of the company's business, coexisting with software publishing. There was not necessarily a separation for users between buying a cassette of games and buying a book of games for your microcomputer, as each work was an invitation to explore your system further and more deeply. Software and computers books were retailed together and side-by-side.<sup>228</sup>

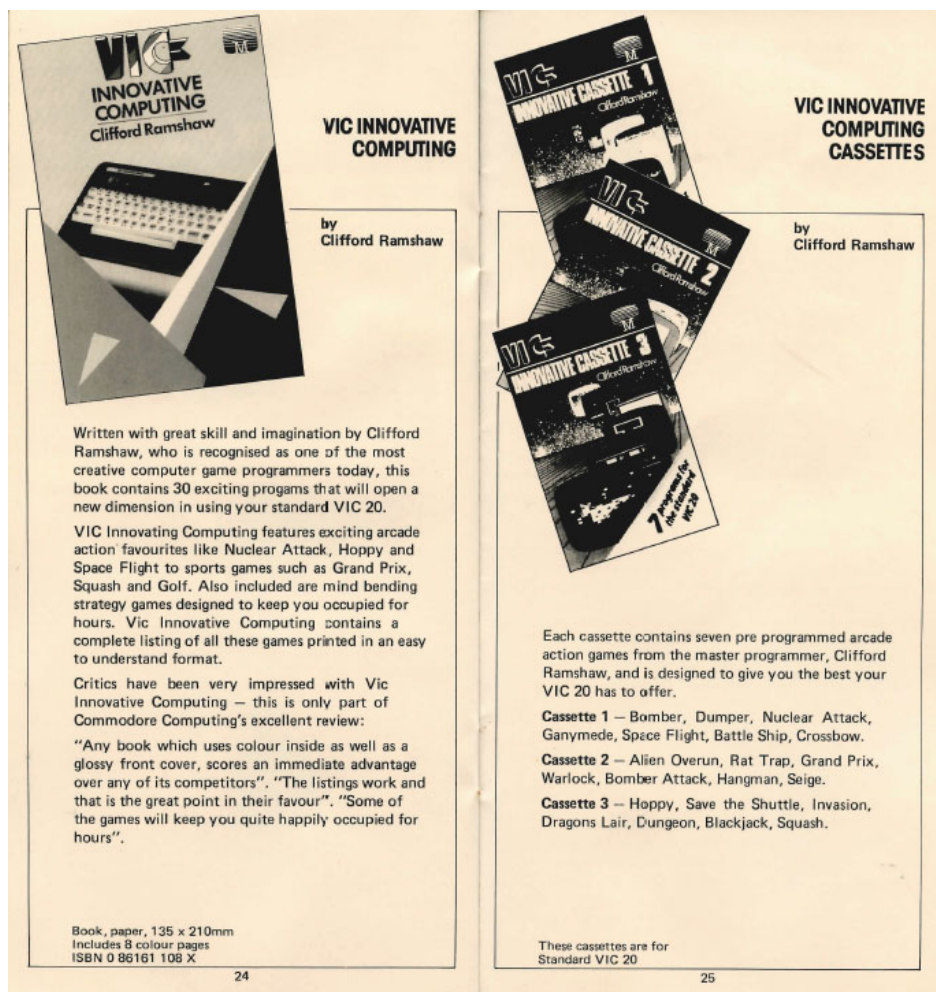


Figure 4: Melbourne House presents Computer Books and Software, 1983

<sup>228</sup> In the UK the bookshop chain WH Smith was an important retailer for 1980s computer games having nurtured an audience originally through computer books. Anderson and Levene.<sup>77</sup>



In their 1983 mail order catalogue “Melbourne House presents Computer Books and Software” fourteen books are offered and thirteen software cassettes. Nine of the cassettes are directly associated with the books, featuring software versions of the program listings (Figure 4).

### 3.4 Tinkerers & Tool Makers

The importance of hobbyists in the history of computer games of the 1980s has been demonstrated by historians from the Netherlands, Scandinavia, Poland, Spain, Czechoslovakia, New Zealand and Britain.<sup>229</sup> In Australia, microcomputers were the preferred games machine. In comparison to the plug-and-play of consoles and the performance-based culture of the arcades, microcomputing inspired more intimate interactions.<sup>230</sup> Milgrom identifies that an emphasis on tinkering with hardware and the hobbyist enthusiasm for the engineering side of computing represented a “vast cultural, societal difference in what consumers wanted from electronic games”.<sup>231</sup> At the time, the US market was characterised by the Atari 2600, a game console with a locked down hardware system, game cartridges and a joystick that plugged into the television. Milgrom explains that American consumers “did not want to know how it worked or what it did, they just wanted to play the game ...and were happy to pay for expensive cartridges that you just plug in”.<sup>232</sup>

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<sup>229</sup> Saarikoski and Suominen; Saarikoski; Suominen, ‘Retrogaming Community Memory and Discourses of Digital History’; Veraart; Svelch, ‘Indiana Jones Fights the Communist Police: Text Adventures as a Transitional Media Form in the 1980s Czechoslovakia’; Garda; Clara Fernández-Vara, ‘Knowing the Past: Game Education Needs a Game History’ (*GDC Vault*, 2012) <<http://www.gdcvault.com/play/1015700/Knowing-the-Past-Game-Education>>; Graeme Kirkpatrick, ‘Constitutive Tensions of Gaming’s Field: UK Gaming Magazines and the Formation of Gaming Culture 1981- 1995’ (2013) 12 *Game Studies* 1; Donovan; Swalwell, ‘The Early Micro User: Games Writing, Hardware Hacking, and the Will to Mod’; Swalwell, ‘1980s Home Coding: The Art of Amateur Coding.’

<sup>230</sup> Swalwell, ‘Questions of Microcomputers’ Usefulness in 1980s Australia’; Helen Stuckey, Melanie Swalwell and Angela Ndalianis, ‘The Popular Memory Archive: Collecting and Exhibiting Player Culture from the 1980s’ in Arthur Tatnall, Tilly Blyth and Roger Johnson (eds), *Making the History of Computing Relevant: IFIP WG 9.7 International Conference, HC 2013* (IFIP Springer 2013).

<sup>231</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>232</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel See also Helen Stuckey, ‘Australian Pioneers: Did Britain’s Bad Weather Breed a Culture of Tinkerers and Crackers?: Alfred Milgrom on

By contrast he found the UK market defined by people who not only wanted to play games, but who also wanted to play with their systems.<sup>233</sup> Working both markets, Milgrom's observations were that the UK gamers favoured the highly modifiable local brands, such as Sinclair, and many of them wanted to know what was under the hood of their microcomputers.<sup>234</sup>

Microcomputers such as the TRS80 (1977), Commodore 64 (1982) and Apple II (series) were popular in America but only with a select crowd, identified and self-identifying as far more geeky than the average console gamer.<sup>235</sup> Not only did microcomputers demand more from their users, each microcomputer had different hardware and software so a game had to be ported or rewritten for every available system to reach the potential computing market.<sup>236</sup> These factors may contribute to why videogame history of the 1980s, with its American emphasis, has tended to focus on arcade games and game consoles, systems capable of generating far more economic return. In *Dungeons and Dreamers* (2003), Brad King and John Borland explain, "The computer games market was a tiny fraction of the billions of dollars being spent on arcade and home consoles like Atari, but it did not matter. For the most part, these people were in the industry

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the UK vs the US Market' (*Play it Again Project*, 2013) <<http://playitagainproject.org/australian-pioneers-did-britains-bad-weather-breed-a-culture-of-linkers-and-crackers-alfred-milgrom-on-the-uk-vs-the-us-market/>>.

<sup>233</sup> Milgrom's experience of the game cultures of the two countries does not reflect the early history of the kit computer whose popularity began in North America within specialist circles. The first was the Altair, but there were many others including kits from Tandy, Apple and Commodore. These were imported in to the UK. In 1978 Science of Cambridge MK14 went on sale through magazines such as *Practical Electronics* and *Practical Wireless* kick-starting the UK passion for home computing. Anderson and Levene.22-23

<sup>234</sup> Ibid.

<sup>235</sup> John Borland and Brad King, *Dungeons and Dreamers: The Rise of Computer Game Culture from Geek to Chic* (McGraw Hill/ Osborn 2003). Kline et al make the distinction around social-economic lines, stating that middle-class affluent homes bought home computers capable of more 'serious' activities, while lower income households bought the more 'childish' consoles. Kline

<sup>236</sup> The adaptation of the DOS operating system working in conjunction with IBM clones as the default created a more uniform market in the early 1990s. This made it more profitable to make and sell computer games. It was at this time that companies like Sierra Entertainment started to see financial success for their graphic adventures.

because they simply loved programming on the temperamental new machines, and the draw of the big money elsewhere simply was not a factor"<sup>237</sup>

In their study of the growth of videogames as a commodity, Kline et al dismiss the early North American personal microcomputer games market as dominated by hobbyists “swapping and stealing programs”, and therefore having no real economic value.<sup>238</sup> Donovan reinforces this theory in his discussion on the US crash and the arrival of the affordable C64 in the US in 1983.

Home computers did not, however, offer the big profits game makers were used to. While computer games were cheaper to produce, the market was smaller, the sale price lower and games stored on floppy disks were easier to copy illegally than cartridges. The move to home computers may have offered refuge from the chaos elsewhere, but it came at the cost of massively reduced profits, which in turn forced massive layoffs of developers.<sup>239</sup>

Australia did not experience a crash in the early 1980s nor did it have an established game development industry to suffer from one. The popularity of microcomputing did, however, create a demand for software and a local DIY culture developed to create both games and software to meet this demand. The Australian market for home computer games was not a large one. Milgrom thinks Australian interest in microcomputing sat somewhere between the US and the UK. He suggests most Australians were not so

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<sup>237</sup> Ibid. 47

<sup>238</sup> Kline, Dyer-Witthford and De Peuter. 142

<sup>239</sup> Donovan. 103

interested in knowledge for knowledge's sake, but were quite interested in the possibilities of hacking their systems.

I don't think that there was that same urge ever here in Australia [to know how your computer worked], in terms of a mass approach to games or computers or anything like that. I mean Australians like to mod things and repurpose things, not necessarily what they were originally intended for. But that's more of a sport...<sup>240</sup>

### 3.4.1 Microcomputer DIY Books

Melbourne House was one of the first book publishers who explored the new territory of programming books. Many others soon joined them. This included Australian Tim Hartnell, founder of the London-based SinclairZX80 Users Club, who established his own UK registered company Interface Publications before returning to Australia in 1984. He is best known for his popular book series published by Penguin Books, UK, including *The Giant Book of Computer Games* (1985).<sup>241</sup> English speakers did not have a monopoly on the hobby and microcomputing books were available across Europe. Spanish publishers Ediciones CEAC and German publishers Franzis-Verlag, for example, both produced substantial catalogues. To give a sense of the scale of the market, the World of Spectrum site lists one thousand and forty one books published between 1977 and 1990 for Spectrum users. Popular Melbourne House books were reprinted several times to address demand and a number were translated into other languages.<sup>242</sup>

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<sup>240</sup> Milgrom, Alfred, Interview, Helen Stuckey 20 March 2013

<sup>241</sup> Robert Young, 'Interface Publications' (*RWYoung mages*, 2013) <<http://rwyoung.com.au/about/interface-publications/>> accessed 20 June 2014.

<sup>242</sup> *The Spectrum Microdrive* (1983) was translated into German (1984) and Italian (1984). *Advanced Spectrum Machine Language* (1984) was translated into Spanish (1985) and Italian (1985). *The Complete Rom Disassembly* (1983) was translated into Portuguese three years after its initial release. 'Melbourne House' (*World of Spectrum*) <<http://www.worldofspectrum.org/infoseekpub.cgi?regexp=^Melbourne+House&loadpics=1>>.

Melbourne House profited from the DIY culture. Best sellers included its guide to the Spectrum's Rom disassembly language *The Complete Rom Disassembly* (1983) which, according to Milgrom, was "a really technical book ... people really enjoyed getting into the innards of the computer, understanding what made it work, getting more involved".<sup>243</sup> Other titles offered guides to hardware engineering, learning programming languages, the in-and-outs of its circuit diagrams, writing in machine language, typing in listings, and making clones of favourite games such as "Spectrum Invaders", "Lunar Lander" and "Adventure".<sup>244</sup> Whilst games were part of the appeal for users of the early microcomputers, the pleasures of knowledge and tinkering were also obviously important.

Melbourne House published over eighty microcomputer books in five years. DIY home computing books are not well represented in the history of videogames. The kind of relationship they represent to videogames is at odds with the prevailing history of videogame production and consumption. They represent a moment in history when it was normative for people to write their own games and when computer games could be identified with the pleasures of coding and hardware tinkering rather than solely focused on the pleasures of play. Beam's 1983 catalogue encapsulated this blurred boundary between buying the software and buying the book as most of the content was offered in both formats (Figure 4). It is a model of media use that is no longer familiar. DIY books don't sit comfortably with the prevailing understanding of game history as built around seminal games and their designers, and are absent from the history of videogames.

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<sup>243</sup> Milgrom, Alfred, Interview, Helen Stuckey 20 March 2013

<sup>244</sup> These game titles from *Over the Spectrum* (1982) eds Philip Williams and Neil Streever

### 3.4.2 Hobbit Redux

In 2012, on the thirtieth anniversary of *The Hobbit*'s release on the Sinclair Spectrum, computer historian Jimmy Maher wrote a carefully researched article about the game's design for his blog The Digital Antiquarian.<sup>245</sup> It offers the most detailed and comprehensive history to be published on the game. To his mortification, he received an email from one of *The Hobbit*'s designers, Veronika Megler, alerting him to errors in his work. She told him that the historic sources – magazine articles, interviews and reviews – regarding the design of the game that attribute the bulk of the game's design to her colleague, Philip Mitchell, were inaccurate and, in fact, she was responsible for most of the game's most celebrated features. Maher, convinced by her precise knowledge of the game's development process, made the appropriate corrections to his history and also published an account of their interaction in which he reflects on how this situation arose.<sup>246</sup>

Megler and Mitchell met as computer science students at Melbourne University and often worked together on group assignments. Working together on *The Hobbit* for Beam Software, they split the tasks along their interests, as they normally did with their university assignments. Mitchell was responsible for building the game's advanced parser system and Megler for developing the database system for the gameworld, its inhabitants and the game's puzzles. On her graduation from university, Megler left Beam Software to get a 'real job'. She had finished her work on *The Hobbit*, but the game was not yet published. Philip Mitchell, her co-creator, stayed at Beam and made it his real job. With Megler's departure,

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<sup>245</sup> Jimmy Maher, 'The Hobbit' (*The Digital Antiquarian*, 2012) <<http://www.filfre.net/2012/11/the-hobbit/>> accessed 18 August 2013.

<sup>246</sup> Jimmy Maher, 'The Hobbit Redux' (*The Digital Antiquarian*, 2012) <<http://www.filfre.net/2012/11/the-hobbit-redux/>> accessed 18 August 2013. Jimmy Maher and Veronika Megler (Personal communication 20-23 November 2012) courtesy of Jimmy Maher

Mitchell was left with the task of compiling the game for release on the Spectrum and later overseeing all its subsequent ports. When the success of *The Hobbit* began to attract considerable interest in games and computing magazines, Mitchell had already started work on his next game, *Sherlock* (1984), which also used his innovative parser. Maher observes that for Melbourne House ‘the story’ of making *The Hobbit* became a means of promoting its next game. Mitchell was championed as the author of the successful *Hobbit* and readers were encouraged to try his forthcoming game. The role of the absent Megler became increasingly obscured.<sup>247</sup> This episode forms an example of how the industry’s commercial preoccupation with new product complicates the work of game history. Furthermore, discussions about text adventures in magazines of the era tended to focus on the game’s parser rather than the world design and this emphasis further diminished Megler’s role. *The Hobbit* is an unusual text adventure in that it is the only one to feature a persistent world. Megler’s open-world design, with characters that played themselves, can be credited for the game’s success. There was, however, no established critical precedent for discussing these features as no other game of the era replicated its open-world system.

Maher’s history and subsequent revision is interesting, not only for the drama of the revelations and the restoration of Megler, but for what it exposes about the industry and press of the era. It casts doubt on the reliability of key historical resources that historians have traditionally privileged. In keeping with Portelli’s observations on oral history revealing the unspoken, what is also telling is that Milgrom’s memories concur with this official media version of events. He only credits Megler with the design

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<sup>247</sup> Ibid.

of the puzzles;<sup>248</sup> a line that one can assume was the official Melbourne House rhetoric to link the game's success back to Beam Software's ongoing team. The unspoken subtext is that within the male dominated industry and hobby it was easy to assume that a woman would play a supporting rather than lead role on design.<sup>249</sup>

### 3.4.3 Tool Makers

An essential part of game development is the creation of software tools such as Mitchell's parser and Megler's database system in which to build a game. Beam was very focused on making tools before there were established industry protocols for pipelines and utilities. Megler's database system for *The Hobbit* was, sadly, never reused, but Mitchell's parser was deployed for *Sherlock* and the *Lord of the Rings* games. William Tang's graphics tool for use in-house on the Spectrum was even released commercially as *Melbourne Draw*.<sup>250</sup>

As the company matured in the mid-1980s, Beam had staff members dedicated to building tools. Whilst in some cases the lead programmer would develop the tools they needed, Milgrom decided it was worth dedicating staff to the challenges of creating tools. The problems with this approach, he explains, were that they ended up with both a backlog of tool requests from game designers and the creation of some rather unwieldy

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<sup>248</sup> Alfred Milgrom Interview 28 April, 2006, ACMI, Helen Stuckey & Noe Harsel; Alfred Milgrom, Interview Transcript 1 March, 2013. Provided by Alfred Milgrom

<sup>249</sup> The issue of gender is not raised in Maher's discussion but it is easy to imagine with so few women in programming how it would be assumed that a woman would take a supporting role even though this was not the practice at Beam Software at this time.

<sup>250</sup> Later Philip Mitchell "discovered C++" and created an in-house graphics editor that worked with multiple platforms and the 'new-fangled' modular graphics cards from Paradise Systems. Bill McIntosh thought Mitchell's CD graphics editor really revolutionised how the graphics were done at Beam. He recall using *Melbourne Draw* to make Spectrum graphics and having to use the NES controller to draw graphics directly on to the native machine for early NES games. Bill McIntosh Interview, 26 April, 2006, ACMI, Helen Stuckey & Noe Harsel



tools because tool designers kept adding nifty features rather than simply solving the problem at hand.<sup>251</sup>

These early in-house tool designers are seldom credited and their contributions can easily disappear from history. Fan sites for retro games rarely document them. The infamous 'Pavloada' cassette fast loader, one of the earliest loaders that allowed for sounds and images as the tape was loading, which Beam attempted to commercialise, gets a few outings in the public memory as players had a very intimate relationship with the idiosyncrasies of different loaders.<sup>252</sup> There are, however, few records of contributions from its creator, Andrew Pavlumanolakos, within fan chronicles. Yet Gregg Barnett, one of Beam's leading designers, recalls Pavlumanolakos always pushing the boundaries of the microcomputer's technology to make Beam's games better. He remembers Pavlumanolakos' determination to create the perfect smooth scroll on the Spectrum and later for the Commodore 64.<sup>253</sup> Another forgotten Beam technical developer was Adrian Thlewis. Thlewis is described by Milgrom as a highly skilled software engineer.<sup>254</sup> Thlewis' does not have a single official game credit from the era, and no mention of him from the 1980s can be found on Moby.com, lemon64.com, World of Spectrum or any other retro gamer site.<sup>255</sup> Thlewis' contribution to Beam was however, profound for Thlewis

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<sup>251</sup> Alfred Milgrom Interview 20 March, 2013, Helen Stuckey

<sup>252</sup> Used on *Hektic*, *Orbitron*, *Munch Mania*, *Cosmic Kanga* and other games from Mastertronic and several other software houses in 1985 and 1986. Fungus, Nostalgia and Onslaught, "Examination Of An Early Tape Loader" (*Online >Recollection*, 2006) <[http://www.atlantis-prophecy.org/recollection/?load=online\\_issues&issue=1&sub=article&id=4](http://www.atlantis-prophecy.org/recollection/?load=online_issues&issue=1&sub=article&id=4)> accessed August 10, 2014.

<sup>253</sup> Gregg Barnett, Interview 29 December, 2012, Helen Stuckey

<sup>254</sup> Alfred Milgrom Interview 28 April, 2006, ACMI, Helen Stuckey & Noe Harsel

<sup>255</sup> A mention of Thlewis reverse engineering the Famicom for Beam appears on the Beam Software page for the Australian Gaming Database. This reference has been sourced from the *Hits of the 80s* essay originally published online at the ACMI web site. [http://www.retrogamingaus.com/wiki/index.php?title=Beam\\_Software](http://www.retrogamingaus.com/wiki/index.php?title=Beam_Software). Accessed 11 July 2014

was key member of the teams who reverse engineered the Famicom and the NES, generating the knowledge that Beam built its future on.<sup>256</sup>

The lack of recognition for the importance of tool makers in existing game history is a significant gap. It is beginning to be addressed by the recent scholarship in Platform Studies with its focus on the hardware and software systems that are the foundation of computational expression. Jimmy Maher, in his study of the Commodore Amiga, offers detailed examination of a number of commercial Amiga tools including the creative genesis of Dan Silva's "Deluxe Paint" for Electronic Arts and Eric Graham's "Sculpt Animate" tools.<sup>257</sup> It is, however, not part of most histories.<sup>258</sup>

### 3.5 Selling Melbourne House

In 1986, Melbourne House phased out its book publishing.<sup>259</sup> Milgrom cites the multiple pressures of publishing as the reason books had to go. Regular book publishers were now moving into the territory, dominating the limited shelf space. Where previously the distribution channels for both software and books were the same, they had now diverged. In addition, unlike traditional publishing, there was no profit in a back catalogue of computer books. As hardware was superseded the old books became redundant. There was also extreme pressure to rush out new books for each new system, gambling the costs of print runs on the popularity of each emerging platform.<sup>260</sup> The computer game industry had changed too. In the mid-1980s new UK companies entered the market driven by commercial ambitions. They reshaped the market from its hobbyist origins into a major

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<sup>256</sup> Andrew Davie recalls the NES reverse engineering team as Adrian Thlewis and Lee Piraq, with a bit help from him and others in the studio. Personal Correspondence 13 July 2016.

<sup>257</sup> Jimmy Maher, *The Future Was Here: The Commodore Amiga* (Platform S, MIT Press 2012).

<sup>258</sup> With the exception of the recognition of the significance of John Carmack's graphic engines created for Id Software and later released as shareware.

<sup>259</sup> Ian R Sinclair's *C for Beginners* was the last book published by Melbourne House in 1987

<sup>260</sup> Alfred Milgrom Interview. Transcript 1 March 2013. Provided by Alfred Milgrom

industry, with games sold on the high street and sales driven by top ten hits.

The small Australian-based management team of Milgrom, Besen and accountant Adam Lancman struggled with the demands of managing the company's software development, book publishing and marketing. The London marketing office for Melbourne House had twelve staff in 1985 and a new manager was appointed to run it. The appointment was not a success. Milgrom recounts that their relationship with their UK management and the business both rapidly went into decline.<sup>261</sup>

### 3.5.1 Mastertronic

The closure of the book-publishing branch in 1986 did not go far enough to ease Melbourne House's management issues and financial strains. A decision was made to sell Melbourne House and allow resources to be dedicated to game development back in Australia. Melbourne House was sold to UK budget games company Mastertronic, who intended to use its back catalogue for their budget range (Figure 5), but agreed to publish new games created by Beam Software as a range of premium titles.<sup>262</sup> Capitalising on its reputation in the market, Melbourne House was to operate as Mastertronic's quality games label. The purchase of the company was to be made in instalments, with an initial payment made to Melbourne House on the sale and with further payment owing for the additional sum.<sup>263</sup> Unforeseen, however, was the sale of Mastertronic itself

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<sup>261</sup> *ibid*

<sup>262</sup> Beam Software retained rights in Australia to their work and the other games that had been distributed by Melbourne House locally. Personal Correspondence Anthony Guter 20-21 January 2014

<sup>263</sup> Guter recalls his frustration with the purchase which meant that Mastertronic were now responsible for all the liabilities of Melbourne House UK. The Melbourne House deal committed Mastertronic not just to the games under development at Beam, but others by third parties commissioned by Melbourne House. This meant Mastertronic had to dedicate thousands of pounds to risky games development rather than just purchasing budget games directly. And, whilst the back catalogue boasted some good sellers like *Way of the Exploding Fist*, many older titles were now moribund and old stock was being returned by retailers at further cost to

eighteen months later to Virgin's new software branch. Virgin wanted Mastertronic, in part, for their wholesale business network. It was, however, Mastertronic's role as the UK distributor for Sega that was most attractive to Virgin. At the time Sega's Master System was on the up-and-up. Virgin was not interested in Melbourne House. With the sale of Mastertronic to Virgin, Melbourne House not only failed to receive the rest of their payment owed by Mastertronic, they also no longer had a UK publisher for their new games.<sup>264</sup>



Figure 5: Melbourne House release and Mastertronic's Ricochet budget re-release

### 3.6 Last Days of the Wild Colonial Boys

Beam Software had to adjust their business model to find publishers willing to take on their games. Some games, such as *Aussie Games*, in development at the time of the Mastertronic sale to Virgin, languished without a publisher. *Aussie Games* was not released until 1990, when the UK company US Gold published it. Three years is a long time in the

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Mastertronic. Mastertronic agreed to pay £850,000 for Melbourne House. How much of this was actually paid has not been shared by either party. Personal Correspondence Anthony Guter 20-21 January 2014

<sup>264</sup> Guter does not credit the sale to Virgin as the reason for the non-payment of the outstanding instalments. He recalls that Mastertronic felt cheated by the deal for Melbourne House and that CEO Frank Herman, a canny businessman, on discovering he was lumbered with multiple returns and games under development that never materialised or whose development dragged on expensively, became determined not to pay. The sale of Mastertronic to a global behemoth Virgin made it too difficult for Beam to try get the monies owed them. Personal Correspondence Anthony Guter 20-21 January 2014

technology driven world of videogames. The delay meant the game not only looked dated on release, but missed the spike of interest in Australian culture created by the *Crocodile Dundee* films (1985 & 1988), and the opportunity to capitalise on the success of its inspiration, Epyx's sports compilation *California Games* (1987).

At the end of the 1980s the North American market for games was looking more attractive to Beam Software. *The Way of the Exploding Fist* (1985) was very successful on the Commodore 64 there. *The Hobbit* had done well with its 1985 disc release for the Commodore 64, and its Apple II and IBM issues through a joint publication deal with Addison Wesley. Addison Wesley had marketed *The Hobbit* in a beautiful box with a copy of Tolkien's book, foldout maps and an attractively designed and comprehensive manual featuring Tolkien's illustrations and printed on good paper stock. This lush presentation had a purpose. The North American market had experienced its infamous crash around 1983 and was cautious about budget games. Fewer home computer games were being published in the US and players were happy to pay more for what they felt were quality games.

### 3.6.1 Nintendo

Beam saw a chance to more fully enter the US market when Nintendo established their American office. When the Famicom was first released in Japan in 1983, Milgrom had travelled to Japan to acquire some machines and Adrian Thlewis, who was still a student at the time, was tasked with disassembling them. According to Milgrom, Thlewis "worked out how to program the Famicom over his summer holiday".<sup>265</sup> Milgrom then

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<sup>265</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel. Whereas Milgrom accredits the Famicom reverse engineering to Thlewis. Andrew Davie does not recall Thlewis working for Beam at the time. This may be explained by Thlewis a student only being there for a short period of his holiday.

approached a Japanese publisher with their results, offering to develop games for them. He recalls, “They laughed at us. They said, you don’t understand, the Japanese system isn’t the same as in the western world ... The way it works is that Nintendo says, you’re allowed to develop three games a year, and you’re allowed to develop five games a year, and that’s it...”<sup>266</sup> Japan was obviously not going to work out and the whole exercise was written off to experience. When Nintendo entered the US market with the Nintendo Entertainment System (NES) a revamped Famicom, Beam looked to the US.

Beam reverse engineered the NES, building on their previous research of the Famicom. Their development system was entirely derived from their disassembling of the hardware and did not use any of Nintendo’s information or steal any trade secrets.<sup>267</sup> It was more user-friendly than Nintendo’s development kit for English speakers and much cheaper. Beam planned to sell their development system to other developers and then take a small royalty on games developed, using it as a revenue model.<sup>268</sup>

They took it to the 1988 Consumer Electronics Show in Las Vegas to demonstrate it to American developers.<sup>269</sup> They had just made their first sale when the heavy arm of Nintendo came down on them. Milgrom recalls “The word was that any publisher who signed up with Beam for development systems would lose their licence, and that Nintendo would ensure that no-one used Beam for development.”<sup>270</sup> Nintendo made a threat to put Beam out of business. Milgrom recalls it as a very dramatic

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<sup>266</sup> Alfred Milgrom Interview 28 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>267</sup> Alfred Milgrom Interview 20 March 2013, Helen Stuckey

<sup>268</sup> Milgrom felt that Nintendo’s expensive development system was designed to give Nintendo more control by keeping smaller developers out of the market. Alfred Milgrom, Interview Transcript 1 March 2013, Provided by Alfred Milgrom

<sup>269</sup> The NES had launched in America at the 1985 Consumer Electronics Show.

<sup>270</sup> Alfred Milgrom, Interview Transcript 1 March 2013, Provided by Alfred Milgrom

time. He desperately tried to meet with Nintendo to discuss the situation, eventually flying to a meeting at Nintendo's Seattle office, organised thanks to support from friends at US publishers, Acclaim. At the meeting it was agreed that Beam would take its development kit off the market and in return they would be signed up as a Nintendo-accredited developer. This made Beam Software one of the first western development companies directly accredited by Nintendo.

### 3.6.2 Culture Change

Nintendo's expressed concerns about Beam's NES development system were that it breached copyright and might offer developers inaccurate information. But Milgrom believed that issues of control dominated Nintendo's approach to business and played an important part in their actions.<sup>271</sup> Nintendo liked to control all aspects of their business, dictating to licensees how many games they could make a year. Nintendo made publishers pay for the manufacture of the game cartridges, thus ensuring Nintendo's profit even if the games did not sell. They controlled release dates and had rigorous ideas about quality control.<sup>272</sup> "In terms of game testing they revolutionised the concept," explains Milgrom:

They said zero defects – we will not allow you to release a game that has any bugs in it whatsoever. Now zero defects was an unheard of concept on any other software or on any other gaming platform. Nintendo knew if they were going to sell it in supermarkets and sell it to mums and dads it had to work off the shelf and had to be flawless. They didn't want returns. We

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<sup>271</sup> Ibid.

<sup>272</sup> Tristan Donovan, *Replay: The History of Video Games* (Yellow Ant 2010) 168. Bill McIntosh recalls that at the time a games publisher who wished to work with Nintendo had to have \$20 million in assets.

had to change our programming attitude and the way we developed games.<sup>273</sup>

Beam's relationship with Nintendo formed part of a cultural change to the way the studio did business at the end of the 1980s.

At the beginning of the 1980s Milgrom liked to employ people straight out of university. Not just for their energy, but because they had not yet acquired a fixed mind-set around programming. Milgrom explains, "we needed people who were prepared to work with machine code, who were prepared to tackle things which other people might not think were possible".<sup>274</sup> He liked people who were "excited and exciting... people who had dreams".<sup>275</sup> Beam Software's young and passionate staff was given autonomy to experiment and be creative. Bill McIntosh, who was employed by Beam in 1985, recounts his continuous sense of amazement that he was being paid to make games. Something he enjoyed so much, he joked, he would have done for free, as he had been for many years at home. He recalls the atmosphere in the office as very relaxed, very 'campusy'. Office hours were quite flexible, and the lead programmer on a game was responsible for managing the production process of their own work. Designers were encouraged to explore personal interests, resulting in games such as Philip Mitchell's *Sherlock*, Gregg Barnett's *Way of the Exploding Fist* and *Rock 'n Wrestle*, and Paul Kidd's *Samurai Warrior: The Battles of Usagi Yojimbo* (1988) based on the Stan Sakai rabbit warrior comics. Considering the business's origins in Outback Press working with artists, poets and writers, this hands-off approach to encouraging creativity is not so unusual. Paul Kidd remembers the early atmosphere with fondness:

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<sup>273</sup> Milgrom quoted in Tristan Donovan, *Replay: The History of Video Games* (Yellow Ant 2010) .p169

<sup>274</sup> Alfred Milgrom Interview 20 March 2013, Helen Stuckey

<sup>275</sup> Alfred Milgrom Interview 20 March 2013, Helen Stuckey



...games studios were laid back, full of creative people, and basically devoid of pretension. Computer games were a fringe market, so no one had brain-throbbing visions of world conquest. The boss wore bare feet and a caftan. My immediate neighbours were hairy, scarecrow-like things with combat boots, or shaven-headed maniacs in bovver boots... This all suited me fine. A lot of good thinking came out of that environment.<sup>276</sup>

Bill McIntosh, who left in 1993 to establish his own studio Torus Games, recalls that when he arrived at Beam in 1985 “the culture was great” but “productivity could be low”.<sup>277</sup> These were early days and there were no real production processes, many of the programmers were self-taught and there were “very messy coding standards”. The lack of schedules, libraries and clear processes led to a ludicrous amount of overtime. Long hours of overtime led to errors.<sup>278</sup> There was no sense of being part of the beginning of a bigger industry: “...at the time we were just making games”, recalls McIntosh.<sup>279</sup>

According to McIntosh, the NES changed everything for Beam. He recalls Milgrom “a cool dude with a leather jacket going off on a business trip and returning in a suit”. Beam was now in the business of developing for American publishers. Publishers expected there to be a producer to talk directly to. They expected to see comprehensive design documents,

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<sup>276</sup> Alistair Wallis, ‘Column: Playing Catch Up: Shadowrun’s Paul Kidd’ (*gamasutra.com*, 2006) 1  
<[http://www.gamasutra.com/view/news/11179/Column\\_Playing\\_Catch\\_Up\\_Shadowruns\\_Paul\\_Kidd.php](http://www.gamasutra.com/view/news/11179/Column_Playing_Catch_Up_Shadowruns_Paul_Kidd.php)>  
accessed 26 April 2014.

<sup>277</sup> Bill McIntosh Interview 26 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>278</sup> Bill McIntosh Interview 26 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>279</sup> Bill McIntosh Interview 26 April 2006 ACMI Helen Stuckey & Noe Harsel

schedules and milestones.<sup>280</sup> Nintendo issued clear demands, recalls McIntosh, one was that games had to be ‘complete-able’. Previously games would not necessarily be completed. Some, like the arcade game *Space Invaders*, just kept throwing enemies at you. Beam Software’s *Fist II* had a trapdoor in the floor of the last level that killed the player instantly.<sup>281</sup> Beam’s Asterix game shipped with a bug that left one of the collectable puzzle pieces invisible to players, making it unwinnable.

Nintendo also had strict control over what could be shown in a game. McIntosh recalls, “No religious symbols, no innuendo and no political messages”.<sup>282</sup> Games historian Tristan Donovan compares Nintendo’s guidelines to The Hays Code that policed Hollywood film from the 1930s to the 1960s.<sup>283</sup> Beam Software had previously not had to consider such issues. *Rock’n Wrestle* included an image of a bare-breasted woman. Artist Frank Oldham hid a naked woman in the background shrubbery of *Fist II* for the Spectrum. This was a surprise to Melbourne House marketing, who only discovered the existence of this inappropriately shaped foliage when one young player enthusiastically wrote to a magazine about it.<sup>284</sup> The relationship with Nintendo meant those days were over.

McIntosh credits the completion of Beam’s transformation from its experimental early days to the more professional and commercial approach required for working with Nintendo with the hiring of two new staff members at the end of the 1980s. Andrew Carter joined Beam in 1989. He had been previously employed at Proteus Development in Norwich, UK on

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<sup>280</sup> Bill McIntosh Interview 26 April 2006 ACMI Helen Stuckey & Noe Harsel

<sup>281</sup> If the player was committed enough to play through the entire game again and jump the trapdoor they then encountered nine warriors who were undefeatable. Bill McIntosh Interview, 26 April, 2006, ACMI. Helen Stuckey & Noe Harsel

<sup>282</sup> Bill McIntosh Interview 26 April, 2006, ACMI. Helen Stuckey & Noe Harsel.

<sup>283</sup> Donovan.p169

<sup>284</sup> Story told to author by Russel Comte and Frank Oldham at the bar at the launch of *Hits of the 80s*.

Commodore 64 games. Hired as a programmer, McIntosh recalls that Carter was influential in enforcing coding standards, revolutionising the graphics and animation systems and instituting a more structured work flow. Andrew Bailey also hailed from the UK and arrived at Beam in 1990. McIntosh considers the highly effective software toolsets created by Bailey to have transformed the studio, “turning Beam on its head”.<sup>285</sup>

The industry Beam first entered with Melbourne House was built around the possibilities of microcomputing. It welcomed inventive start-ups and cultivated an audience who, in their fascination for the hardware and software, were not that far removed from the game designers themselves. This industry model was now replaced with the big business of console design, with its onerous barriers of entry and strict protocols.

Nintendo was a big player and Nintendo accreditation was a big deal. Gregg Barnett recalls that, when Beam secured its Nintendo accreditation, “every man and his dog came [to them] with stupid ideas”.

I can remember one or two weeks going through a process where I had the people from ... California Raisins coming and saying, “Can we do a game on Californian Raisins?” Somebody in America [a pizza chain] ... had a character that sits on top of the pizza called a [Zoid], and they wanted to do something on [it], and you know, we had Madonna’s agent coming on wanting a game. But then we had Time Warner backing it up saying you can’t because this was the time she released the sex book, saying it can’t be/have anything controversial in it

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<sup>285</sup> Bill McIntosh Interview 26 April, 2006, ACMI. Helen Stuckey & Noe Harsel. Andrew Davie most strongly disagrees with McIntosh’s accreditation to these changes to Carter’s influence describing it as “laughably wrong” but confirms the impact of Bailey describing him, and his toolset, as “truly brilliant”. Personal email correspondence Andrew Davie 8 August 2016.

because they want to clean her image up. Then, you know there was all these... weird things. We had Guns 'n' Roses get in touch, and Axel Rose wanted a game where he was the anti-Christ. And I remember these weird things which nothing ever happened from.<sup>286</sup>

Beam's settlement with Nintendo gave them a short-term advantage in the new market, but as more companies in the US became accredited it became harder for the Australian-based studio "to land the more interesting and lucrative titles" according to Milgrom.<sup>287</sup>

We did a lot of work for the major US publishing companies that had a Nintendo licence. Ultimately we were one of the few studios who had a good knowledge of developing for the Nintendo systems. But it was hard to get the really profitable work. If a game was important, or not too technically challenging then the US companies preferred to work with a local studio – easier on communications, and much easier to send someone to check on progress if something went wrong. We worked hard on having the best communications possible and often answered publishers' queries faster than their local developers. But in the end we ended up getting the hard work – projects where the local studios did not have an engine or where the game was technically difficult, or maybe it was not so financially critical to the publisher.<sup>288</sup>

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<sup>286</sup> Gregg Barnett, Interview 29 December 2012, Helen Stuckey

<sup>287</sup> Alfred Milgrom, Interview Transcript 1, March, 2013. Provided by Alfred Milgrom

<sup>288</sup> Alfred Milgrom, Interview Transcript 1, March, 2013. Provided by Alfred Milgrom

The tyranny of distance once more shaped the company's fate. Communication was by fax and phone and the Australian studio was too far away from the centre for publishers to risk the big money. Beam became less focused on creating their own games, accepting more licenced title work from publishers. The work-for-hire model that Beam now found itself part of had few advantages for the developer. The studio was vulnerable to publisher whims. Milestones missed resulted in financial penalties and the threat of a cancelled project could mean bankruptcy. All their hard work did not result in any intellectual property for the company, meaning that even if a game was a big success it did not translate into a significant return for the developer. This model came to define the Australian game industry from the start of the 1990s till the late 2000s, when it imploded due to economic factors including the GFC and changes to how games were made and consumed.

The work-for-hire model of game development made it virtually impossible to generate sufficient funds to invest in developing original intellectual property (IP). The dream of creative control and owning your own IP, however, was still alive at Beam through the late 1980s and into the 1990s. Paul Kidd recalls designing, on paper, many original games that never saw the light of day: "As head designer, I was supposed to constantly design new games for the company," Kidd explains. "I'd have to cook one up every month or so – all designed, documented and planned. In all the time I was there, not one of those designs was ever made. Licenses came down from on high, and the company preferred to take that money rather than risk developing its own projects."<sup>289</sup>

#### 3.6.4 Birth of an Industry

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<sup>289</sup> Wallis. Entering the 1990s, Beam did not lose its enterprising spirit and in 1991 published *Aussie Rules Football* for the NES for the Australian Market. In 1997, Beam published its most ambitious projects, *The Dame Was Loaded*, an interactive live action detective noir, an impressive work that, sadly, failed to find an audience.

Gregg Barnett recalls, “when the NES came in ...it was another pioneering spirit. But it soon sort of got lost under mediocre licences and stuff”.<sup>290</sup> Beam Software/Melbourne House’s pioneering spirit in the 1980s is a central theme examined in this chapter. The loss of creative freedom that occurred with changes to the business practices under Nintendo’s development licence marks the end of this era. But, as Bill McIntosh’s memories illustrate, it was also a time of increasing professionalism, growth and success. The studio grew in size, hiring more people and attracting talent from overseas. Beam, with its coveted licence to develop for Nintendo, trained a generation of Australians to design for the publisher’s systems. Bill McIntosh founded Torus Games in the nineties, quickly scoring contracts to develop for Nintendo systems. Tantalus games, founded by ex-Beam staff Trevor Nuridin and Andrew Bailey in 1994, started on the NES but shifted alliance to Sega’s Saturn. Beam Software was a training ground for the Australian industry. Milgrom recounts this legacy as one he is most proud of:

... one of the things that really pleases me is how many people who started at Beam went on to found their own companies or develop things in other places to do with games. So obviously we developed a culture where people learnt their skills, learnt how to stand on their own two feet and create a whole industry in Australia.<sup>291</sup>

### 3.6.3 The Power Glove - a historic fail

Although the end of the 80s saw few original IP projects produced by Beam, its *Bad Street Brawler* (1989) was one of only two games ever

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<sup>290</sup> Souri, ‘Interview with Gregg Barnett’ (*Tsume: Australian and New Zealand Games Development*, 2014) <<http://www.tsume.com/australasia/australia/news/230902/interview-with-gregg-barnett>> accessed 30 April 2014.

<sup>291</sup> Alfred Milgrom Interview 28 April, 2006, ACMI. Helen Stuckey & Noe Harsel

designed for the Mattel Power Glove. It was an era infatuated with the intoxicating promise of virtual reality, with the techno-hipster magazine *Mondo 2000* hyping a cyberpunk future. The game peripheral, based on a robotic glove created in an experimental laboratory by virtual reality pioneer Jaron Lanier, had the potential to be state-of-the-art game technology. Designing a game for the glove was a revolutionary adventure and it could have placed Beam at the forefront of a new era of game design.

Sadly, *Bad Street Brawler* did not fulfil this promise. Beam's Andrew Davie was writing the Commodore 64 version of *Street Hassle* and whilst it was in developed it was decided it should be used as a test bed for Beam's NES development system. As Davie designed *Street Hassle* Thwelis created a version for the NES, working out all the parts like scrolling, how to do big sprites etc. When Davie finished *Street Hassle* he was asked to complete a version of the game using Thwelis' test-bed code. It was a nightmare job according to Davie working with the incomplete manuals and system. The unfinished game was shelved (much to Davie's joy).<sup>292</sup> He was less than delighted when Milgrom announced several years later that he had sold their NES version to a publisher.<sup>293</sup> Davie was instructed to "finish it and add some setup codes to work with Mattel's Power Glove". The game was going to act principally as a conduit for allowing you to play other games using the Power Glove.<sup>294</sup> Davie worked with a prototype Power Glove. He recalls it was "a hacked lycra-style golf glove with stuff velcroed onto it". Its accuracy he recalls was not to bad "something like a quarter inch at 5

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<sup>292</sup> Davie recalls that Beam's NES programming "manual" at the time "was full of – and I'm not making this up – "Don't know what this bit does."" Andrew Davie / Beam Software, Melbourne House" ([www.c64.com](http://www.c64.com), 2010) <[http://www.c64.com/gt\\_display\\_interview.php?interview=9](http://www.c64.com/gt_display_interview.php?interview=9)> accessed June 12, 2012.

<sup>293</sup> *Street Hassle* seems an unlikely candidate for a Nintendo game with its politically incorrect violence directed at blind men, old ladies and midgets!

<sup>294</sup> Ibid.

feet”.<sup>295</sup> He explains; “The thing is, it had two modes - raw, where the actual position was returned, and processed, where the movement was converted into a "gesture" or the equivalent joystick movement (button+up). Most usage was with the gesture mode, which was inaccurate and lagged a lot. So it made it feel awful and non-responsive. I think the raw-mode power glove would hold up OK even today as a workable peripheral.”<sup>296</sup> Davie felt that the glove might have been fun in a real 3D environment (as was the purpose of the experimental robotic VR DataGlove created by Lanier and Zimmerman) however, as a game-controller it was just a gimmick. The gap between the hype built up around the Power Glove’s pre-release marketing, which included television commercials showing off the gloves’ supposed capabilities, and the reality of its actual performance was enormous. It became one of the most pilloried peripherals in videogame history.<sup>297</sup> The glove’s epic failure continues to exert fascination. Beam’s game was one of only two designed with the gloves’ custom controls; it represents a path within videogame history that was not taken. It was not until 2006 that motion control on videogame consoles was popularised by the Nintendo Wii.

### 3.7 Discussion

This chapter is part chronicle, part emancipatory history. It demonstrated how the story of Melbourne House and Beam Software provides new perspectives on the larger narratives of game history, yet is deeply interwoven into the cultural, geographic, and political conditions of the local. I have eschewed the normal tropes of videogame history to look at

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<sup>295</sup> Personal email correspondence Andrew Davie 16 July 2016

<sup>296</sup> Andrew Davie personal correspondence 8 August 2016.

<sup>297</sup> Created by engineer Thomas Zimmermann and virtual reality pioneer Jaron Lanier, the robotic surgery-oriented wearable Data Glove provided 256-point resolution to measure flexion of each finger, as well as the ability to detect the yaw, pitch, and roll of the entire hand. Trent Wolbe, ‘Status Symbols: Nintendo Power Glove’ (*The Verge*, 2014) <<http://www.theverge.com/2014/1/14/5307370/status-symbols-nintendo-power-glove>> accessed 30 April 2014.



stories that speak to the company's Australian identity and reflect on assumptions in existing game scholarship and retro-game sites regarding what is to be championed and remembered. I proposed one reading of the cultural change at Beam Software at the end of the 1980s in terms of the end of an era of creative freedom and innovation. I then posited an alternative reading of Beam's transformation as marking the establishment of a more mature industry and heralding the growth of the Australian industry. Neither reading contradicts Hinton's observation that the most remarkable feature of the Australian industry is that "it exists at all".

While this is recent history, the lack of archives and other resources present a challenge to historians. There are resources available online created by retro gamers, but without corporate archives it is difficult to determine a catalogue of Beam Software's games of the 1980s. The different titles, platforms and publishers, and the variation in titles from country to country make it problematic to create an accurate and complete list of works. Retro gamer sites offer a wealth of useful data, but this information is most often shaped around hardware platforms, challenging any readings that do not fit the model. Information across differing retro game sites is uneven and there are no established conventions for videogame taxonomy. Chapter 6 will offer a more comprehensive discussion of retro game sites and what may be learnt from their practices regarding the collection and display of games. As a local history, Melbourne House/Beam Software's story demonstrates how the local is interwoven with larger international stories about games in the 1980s. In conclusion, I suggest that game histories should include diverse readings epitomised by the conflicting narratives of Beam Software finishing up the decade as both triumphant and diminished.



**History Part II: Transitioning  
to the Digital: SSG's Run5  
Magazine**

## 4.1 Introduction

This chapter explores a history of games' reception as documented through an examination of the magazine *Run5*. Between 1986 and 1996 Australian game developers Strategic Studies Group's (SSG) published twenty-five issues of their magazine *Run5* to communicate with their player community. Produced in-house and circulated by subscription, *Run5* provided information on SSG's games to their audience of dedicated wargamers. The magazine featured articles on their games, new scenarios to play, and thorough historical information on the featured battles. As a primary resource, *Run5* offers historians a detailed chronicle of SSG's games, insights into their design decisions, an account of staff activities, and reports on company highs and lows. The magazine also reveals a sense of the company's character, its culture and the rapport they built with their audience. *Run5* is a valuable record of SSG's relationship with their audience and reveals much about how their games were consumed: who played them; where they bought them; and how they played them.

### 4.1.1 A History of Reception

In examining the relationship that *Run5* created with its community, I consider how this activity relates to recent discussion on computer games and participatory culture,<sup>298</sup> reflecting on Swalwell's observation that

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<sup>298</sup> Henry Jenkins, *Fans, Bloggers, and Gamers: Exploring Participatory Culture* (New York University Press 2006); John Banks, "Negotiating Participatory Culture in the New Media Environment: Auran and the Trainz Online Community – An (Im)possible Relation" [2003] MelbourneDAC Proceedings <<http://hypertext.rmit.edu.au/dac/papers/Banks.pdf>>; John Banks, "Opening the Production Pipeline: Unruly Creators", *DiGRA 2005 Conference Changing Views Worlds in Play* (2005) <<http://www.digra.org/dl/db/06276.19386.pdf>>; Olli Sotamaa, "Computer Game Modding, Intermediality and Participatory Culture" [2003] *New Media 1*; Olli Sotamaa, "When the Game Is Not Enough: Motivations and Practices Among Computer Game Modding Culture" (2010) 5 *Games and Culture* 239 <<http://gac.sagepub.com/cgi/doi/10.1177/1555412009359765>> accessed August 31, 2014; Olli Sotamaa, "On Modder Labour, Commodification of Play, and Mod Competitions" (*First Monday*, 2007) 1 <<http://firstmonday.org/ojs/index.php/fm/article/viewArticle/2006/1881>> accessed September 17, 2014; Hector Postigo, "Modding to the Big Leagues: Exploring the Space between Modder and the Game Industry" (2010) 15 *First Monday* 1 <<http://firstmonday.org/ojs/index.php/fm/article/view/2972/2530>>; Walt Scacchi, "Mods, Modders, Modding, and the Mod Scene" (2014) 15 *First Monday* 1 <<http://firstmonday.org/ojs/index.php/fm/article/view/2965/2526>>.

accounts of user productivity in the era of microcomputers have largely been overlooked in game scholarship.<sup>299</sup> SSG wanted to provide wargamers with computer games that were as versatile and customisable as the manual hex-based board games that were familiar to players of traditional wargames. *Run5* was addressed directly this community of highly literate wargamers

An examination of *Run5*'s articles reveals the magazine's focus. Its articles were intended to educate the reader not just to extend and improve their gameplay within the scenarios provided, but also to develop their skills to customise and create their own scenarios within SSG's game systems. The concept of a game system<sup>300</sup> was familiar to players from manual wargames, where players could generate different game scenarios from the game's base rules and tables for movement and combat by altering the battlefields, the units (and some rules), to reflect the different situations.<sup>301</sup> The creation of user-designed scenarios and maps formed part of an existing culture of gameplay for manual wargamers. SSG's game systems on the computer supported this tradition of customisation. They encouraged players to personalise their scenarios to reflect their historical interests and individual approaches to wargaming. On the computer, SSG's game systems offer a model for participatory culture that is generally associated with a much later era of videogame history. The legacy of manual wargames and the early computer wargames inspired by them are a mostly forgotten part of the story of videogames. Matthew Kirschenbaum states that the lack of knowledge about them today is disproportionate to

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<sup>299</sup> Swalwell, 'The Early Micro User: Games Writing, Hardware Hacking, and the Will to Mod.'

<sup>300</sup> Game Systems are the sets of resources and rules for playing a game that are conducive to the creation of new games that use the same components. The question of when, on the computer, a game system becomes a game engine is an interesting one.

<sup>301</sup> James F Dunnigan, *The Complete Wargames Handbook* (3rd Edition, 1997) 66.  
<<http://www.professionalwargaming.co.uk/Complete-Wargames-Handbook-Dunnigan.pdf>>.

their historical influence and early market share.<sup>302</sup> In Game Studies and history, little attention has been paid to the central role that user-generated content played within wargame culture in the 1980s.<sup>303</sup>

When it first launched, *Run5* acted as a vehicle for both engaging and educating SSG's audiences about how the gameplay of the manual wargame had been adapted to function on the computer and how they could use the computer to play wargames. Servicing an international player community, SSG were swift to take advantage of the opportunities provided by the Internet. In 1988, SSG went online, using CompuServe and Applelink forums to provide product support to their community and host community discussion on playing their games and designing in their game systems. No trace of these digital resources and community activity has survived. Yet *Run5* remains as a comprehensive record of the early history of computer wargames and the Australian developer's part in that history.

I conclude the chapter with some observations on how SSG's decision to share the now historic magazines online on the Popular Memory Archive has reignited a discussion with its community. These encounters reveal that the community's relationship to the material is not simply one of nostalgia but continues to address the value of these historic game materials as a design resource.

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<sup>302</sup> Matthew Kirschenbaum, 'War Stories: Board Wargames and (Vast) Procedural Narratives' in Noah Wardrip-Fruin and Pat Harrigan (eds), *Third Person: Authoring and Exploring Vast Narratives* (MIT Press 2009).

<sup>303</sup> Ibid; Matthew Kirschenbaum, 'Archives of Wargames' (*Zone of Influence - Matthew Kirschenbaum's Blog*, 2008) <<http://www.zoi.wordherders.net/?cat=5>> accessed 6 June 2014.

## 4.2 Strategic Studies Group

In the 1980s SSG were renowned internationally for their computer wargames. The important crossover from the very material hobby of traditional strategic wargames to early home computing is an important, yet overlooked, part of the history of videogames. In 2000, SSG was one of only three surviving Australian companies whose practice stretched back to the 1980s, and yet the timeline produced by the recently formed Game Developers Association of Australia failed to include SSG.

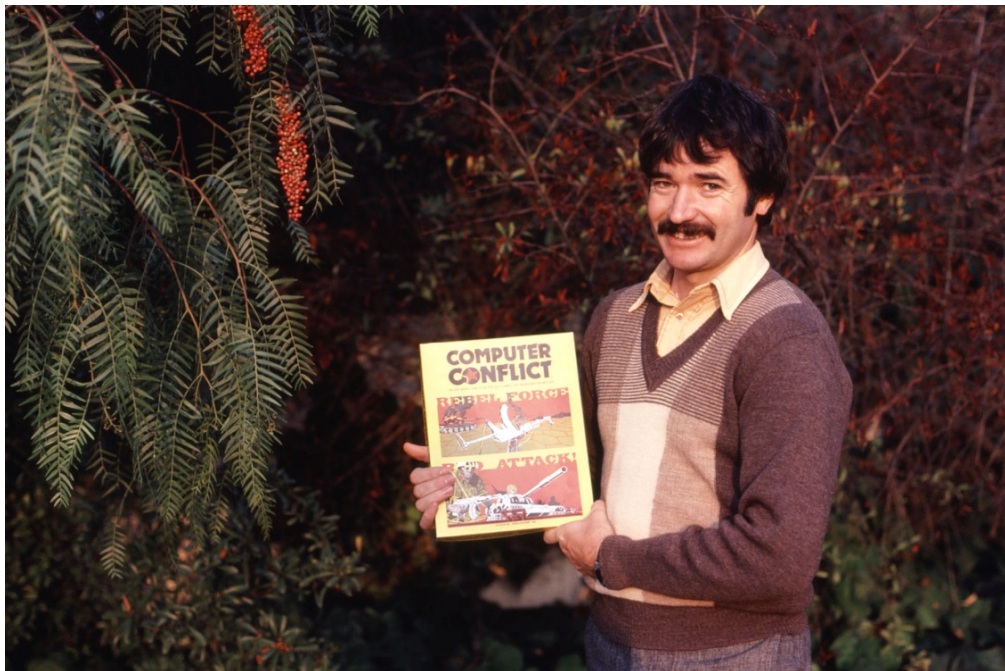


Figure 6: Roger Keating – SSI's *Computer Conflict* featured his game *Conflict*, 1979.

Founded in 1982, Strategic Studies Group was created by two dedicated Sydney wargamers, Roger Keating and Ian Trout. Trout, an ex-school teacher, was at the time managing a military history bookshop and had been co-opted by Keating to test his computer game designs.<sup>304</sup> Keating recounts how, on the departure of his principal game tester, the previous manager of Napoleon's Bookshop in Sydney, he approached the new

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<sup>304</sup> Interview Roger Keating, Helen Stuckey, 16 June, 2013.

manager, Ian Trout, to test his games written for the Apple II. Not a computer fan, Trout was originally dismissive of the microcomputer games but, when Keating came back a week later, Trout had made an effort to play all the American-designed computer wargames he had access to. Trout expressed his opinion that, although Keating's games "were bad - these games were just so much worse". Seeing a market opportunity, Trout persuaded Keating that they should start a business together.<sup>305</sup>

Keating had recently returned from the United States where he had been writing computer games, at the offices of the pioneering American computer wargames company, Strategic Simulations Inc (SSI).<sup>306</sup> In 1979 SSI had offered him an international publishing deal for his previously self-published game *Conflict* (Figure 6).<sup>307</sup> Encouraged by his first international publishing deal Keating left his teaching job as a high school maths teacher, to try and make it as a game designer.<sup>308</sup> He explains that by 1979, he was exhausted by years of campaigning for computing in schools. Frustrated by the New South Wales Department of Education's complete lack of interest in computers in education, when he received SSI's offer it seemed like an opportunity to try something different.<sup>309</sup> The American publisher's offer coincided with an invitation to visit the United States as the International Apple Corp Director for Australia. The role was as an honorary

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<sup>305</sup> Ibid

<sup>306</sup> Not employed by SSI, but a freelance Australian designer, Keating was invited to work from SSI's American offices. He enjoyed their company, met many pioneers of the computer games industry and learnt a lot about the business of making computer games. SSI published his games and he taught them a bit about AI programming. Ibid.

<sup>307</sup> *Conflict* for the Apple II was self-published in Australia by Keating Software Inc. It sold about 50 copies in Australia. Keating sent copies of the game to various American publishers and reviewers. SSI contacted him and offered to publish the game boxed with another game called *Rebel Force*, together they were published by SSI as *Computer Conflict* (1980). Ibid.

<sup>308</sup> These fans were mostly his students and peers from Apple User Groups who played early computer games and rated Keating games highly amongst those that were available.

<sup>309</sup> With fellow educators Laurie Schaff and John Hughes, Keating had established the Computer Education Group of New South Wales, hosting conventions and lobbying the state government to introduce positive teaching environments for computing in schools. Keating describes his time lobbying with the group as "six years of hitting my head against a wall". Ibid



ambassador for the Apple User Groups of Australia. Highly active in the Apple computer community since the micro-computer's arrival in Australia in 1978, Keating served as the president of the Apple User Group of Sydney and in that role was responsible for writing a substantial amount of the software used by local Apple owners throughout NSW.<sup>310</sup> Working from SSI's office in the US, Keating tried to learn as much about his new profession as he could.

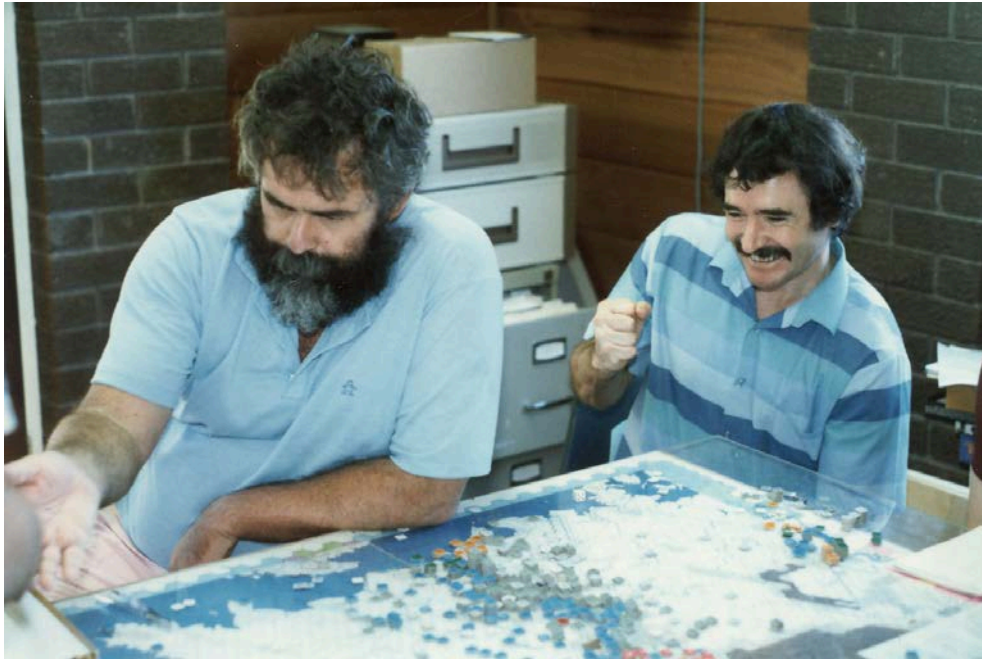


Figure 7: Keen wargamers, Ian Trout (left) and Roger Keating (right) founded SSG in 1982

After his time in America, Keating continued to write games for SSI, which, in 1981, eventually offered him a job. Tempted, but concerned about working in the fledgling computer game industry in a foreign country, he opted for the security of staying in Australia. He continued, however, to design games for SSI until 1985, despite starting SSG in 1982.<sup>311</sup>

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<sup>310</sup> Interview Roger Keating, Helen Stuckey 16 June, 2013.

<sup>311</sup> SSI founder and CEO Joel Billings was originally upset when Keating founded SSG, not least as the companies names were very close. Meeting Trout with Keating however, at an early US Origins games convention, the resulting bonhomie of the three passionate wargamers quickly smoothed over the issues. Ibid.

When Keating and Trout founded SSG, they established it as both a developer and a publisher (Figure 7). Trout knew a bit about publishing through his bookshop work, and Keating, from his relationship with SSI, knew designers did not make the real money. Keating had published several games with SSI and already had a reputation as an exceptional programmer able to squeeze engaging artificial intelligence (AI) out of 64KB of RAM on the Apple II. Trout was an avid amateur military historian with a passion and skill for manual game design (board games and wargame miniatures). Their first game, *Reach for the Stars* (1983), a space exploration game, is credited with launching the 4X genre of computer space games (eXplore, eXpand, eXploit, eXterminate). It took its inspiration from board game design, in particular Avalon Hill's *Stellar Conquest* (1973), reworking the gameplay to take advantage of the strengths of the computer<sup>312</sup> (Figure 8)

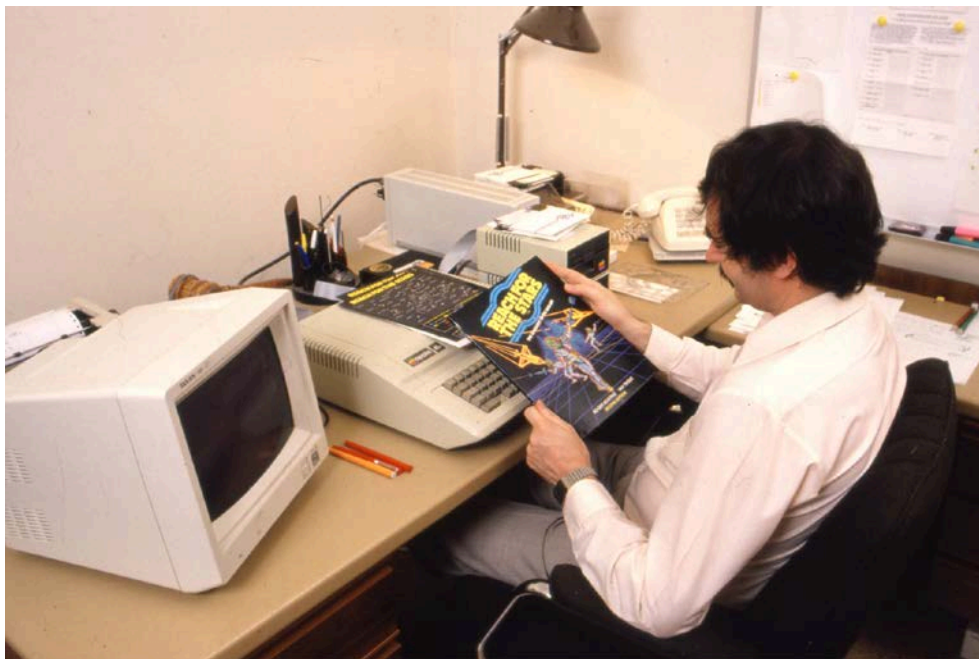


Figure 8: Roger Keating with *Reach for the Stars*, 1983.

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<sup>312</sup> SSG had been in discussions with publishers Metagaming for the rights to use *Stellar Conquest* and felt they were close to signing a contract when Metagaming was bought by wargames behemoth, Avalon Hill. Not keen to get in bed with Avalon Hill, they reworked the game to become its own concept, creating *Reach for the Stars*.

The game was very successful, cementing Keating's reputation for AI design. Its sales statistics reinforced for SSG the importance of the American market, as the Australian audience for computer games was very small. Before they published their next game, *Carriers of War* (1984), they hired an American to give the company a local American presence. John Gleeson's job was to look after any American problems, from player support to customs and duty. In 1986, fellow wargamer and programmer, Gregor Whiley, was invited to join the company as the third director and company 'diplomat'.

#### 4.2.1 Run5

*Run5* was conceived as a quarterly magazine but did not quite hit that mark every year, publishing only twenty-five issues in ten years. As a company organ, it was entirely dedicated to supporting SSG's games with the occasional review of a competitor's work they admired. Its primary content was new battle scenarios that could be entered into the appropriate SSG game system to create new 'games' to play. The scenarios were often modelled on historic battles of a related nature to the original game but required the terrain, weather and all the units to be reconfigured.

For their second game, the air and sea battle game *Carriers of War 1941-1945: Fleet Carrier Operations in the Pacific* (1984, Apple II), Keating built a design kit to enable designer Ian Trout to craft the historical battle scenarios. Trout was not a programmer and did not possess a deep knowledge of computing. Keating designed a system whose interface allowed Trout to input his precise military knowledge as data into the system. This data sat separately from the routines that Keating created to run the game modules.<sup>313</sup> This design made it easy to reconfigure the game

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<sup>313</sup> Roger Keating, 'Programming and Design' [1986] *Run5 Issue 1 2*.

for other scenarios, allowing users to build their own scenarios without the need for programming skills. *Carriers of War* came packaged with six distinct scenarios to play and instructions on how to design your own. More than just a game, with *Carriers of War*, players were purchasing a customisable game system.

*Carriers of War* (1984), was the first of SSG's game systems. It was followed by *Europe Ablaze* (1985). The *Battlefront* game system, released in 1986 for the Apple II and the Commodore 64, was designed for land battles of the Second World War. It simulated the challenges of real command, including those of managing supply and troop fatigue. In response to player requests and fresh design enhancements, SSG released new iterations of their systems adding additional features. *Battlefront* update *Battle of Normandy* (1987) added climate types, so scenarios could be created for regions beyond Europe. *The Decisive Battles System* (1987) addressed the challenges of battles of the eighteenth and nineteenth centuries.<sup>314</sup>

Each issue of *Run5* featured scenarios for selected SSG game systems. There were always at least two scenarios in each issue. Each scenario featured an engaging narrative introduction that established the historical facts of the conflict and set the scene. If they were speculative history, a

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<sup>314</sup> The additional features for the *Battlefront* System update for *Battle of Normandy* (1987) were requested by users. These included the ability to select climate types, the movement of divisional HQs, river forging, and the interrelationships between battalion types. Requests that give a sense of the detail that concerned SSG's audience of scenario builders. Later that year SSG released *Halls of Montezuma* (Apple II) in the *Battlefront* system, making another series of upgrades including the inclusion of WarPaint and WarPlan tools allowing users to design their own symbols and map icons. Issues of compatibility were addressed by SSG, so all games made in original *Battlefront* system worked in *Battles of Normandy*. For *Halls of Montezuma*, additional fixes were required and SSG dutifully printed upgrades for their *Battlefront* scenarios in *Run5*. *Carriers of War* was updated in 1991 (CAWII) and the *Carriers of War Construction Kit* (IBM) offered a separate editing system. This was done to address the scale and capacity (and expense) of the new scenario editor. It heralded a split between those users who just wanted to pay for the playable game and those who wished to get their hands on the toolkit to create their own scenarios. The *CAWII Construction Kit* brought several major improvements, the most significant being the WarRoomTM, an AI system that allowed the AI to be tailored for each scenario, handing over more control to the user in their designs.

## Chapter 4 History Part II: Transitioning to the Digital: SSG's Run5 Magazine

popular genre, they would frame the “what if” question to a moment in history. What if the allied ships arrived sooner? What if they landed at a less exposed bay? The scenario information in the form of maps and tabulated data were published in the magazine covering all the information for terrain, weather, ships and squadrons, scenario lengths, and all the task group activities associated with the various forces. This data had to be entered into the game system manually by the player. Figure 9 is an example of one small group of tables from many featured in the 6 page ‘Relief of Wake Island Scenario’ by Jack Green Jr. and Ian Trout from *Run5*, Issue 1, January 1986.

WAKE ISLAND - Allied Task Groups					
TASK GROUP #	1-23	1	2	3	4
FLAGSHIP	[-]	CA 36	DD390	LEXINGTON	DD366
TOTAL SHIPS	[-]	11	2	11	2
OBJECTIVE	1-23	1	0	5	0
MISSION	0-7	0	6	0	6
HEADING	0-7	5	6	5	5
ENDURANCE	0-31	16	31	22	31
TF NUMBER	0-3	0	0	0	0
TF ADMIN	0-3	0	0	2	0
REINFORCEMENT	0-9	1	1	1	1
TF COMMAND	Y/N	Y	N	N	N
START AREA	Y[x,y]	83,27	83,25	83,34	83,25
SEARCH PATTERN	Y/N	SW,W NW		SW,W NW	

Axis Task Groups			
1	2	3	
SORYU	CL 14	CA 3	
6	14	7	
1	1	0	
0	5	3	
4	1	1	
24	28	20	
0	1	1	
3	1	2	
1	0	0	
Y	Y	N	
33,0	25,55	28,56	
E,SE		NEE	
S		SE	

WAKE ISLAND - Carriers				
CARRIER NUMBER	1-31	1	2	3
CARRIER NAME	[11]	LEXINGTON	SARATOGA	SORYU
AIR CAPACITY	1-127	90	90	71
SHIP CLASS #	1-63	1	1	12
TASK GROUP	1-23	3	1	1
ASSIGNED SQDS	[5]	1,2,3,4	5,6,7,8	11,12,13
SPOT NUMBER	0-31	6	6	6
DAMAGE STATUS	0-15	15	15	15
RADAR	0-7	1	1	0
DAMAGE CONTROL	0-3	0	0	1
AA ACCURACY	0-3	1	1	2

WAKE ISLAND - Bases				
BASE NUMBER	1-23	1	2	3
NAME	[11]	WAKE ISLAND	MIDWAY	ROI
LOCATION	[x,y]	40,37	66,7	27,66
ASSIGNED SQDS	[10]	9	10	23,24
HEAVY AA	0-31	1	0	2
LIGHT AA	0-31	4	2	5
SPOT NUMBER	0-15	3	2	5
DAMAGE STATUS	0-15	10	15	15
AIRSTRIPE TYPE	0-7	1	0	2
RADAR	0-7	0	0	0
AA ACCURACY	0-3	2	0	1
DAMAGE CONTROL	0-3	1	0	0
THEATRE	0-1	0	0	0
ALLIED	Y/N	Y	Y	N
FIGHTER FAC.	Y/N	Y	N	Y
BOMBER FAC.	Y/N	N	N	Y
PORT FACILITIES	Y/N	Y	Y	Y
SEARCH PATTERN	Y/N		S,SW W,NW	N,NE E

WAKE ISLAND - Brief		
NATIONALITY	AXIS	ALLIES
MORALE	0-3	2
PASSIVE ASW	0-3	0
FIRE CONTROL	0-3	2
INVASION MULT.	0-3	1
RADAR TECH.	0-3	0
AERIAL TORPEDOS	0-3	3
SURF. TORPEDOS	0-3	3
SUB TORPEDOS	0-3	3
ABORT DIRECTION	0-7	6
SURPRISED	Y/N	N
PARA-FRAGS	Y/N	N
CLEAR POINTS	Y/N	Y
COASTWATCHER 1	Y/N	14,59
COASTWATCHER 2	Y/N	38,67
COASTWATCHER 3	Y/N	-
COASTWATCHER 4	Y/N	-
ANCHOR POINT 1	Y/N	-
ANCHOR POINT 2	Y/N	-

Figure 9: Example of data tables for 'Relief of Wake Island Scenario'.

In the first *Run5* editorial, Ian Trout explains the benefits of the magazine and the joys of typing in a scenario explaining it is “a far cheaper, friendlier, and more versatile format than scenario disks ... as well as providing an opportunity for those of you to contribute a scenario, article,

letter or whatever”.<sup>315</sup> Entering scenarios, however, required a lot of tiresome data entry. In their second issue, Trout announced that scenarios would also be available on disk, a response to numerous requests for versions of playable scenarios that did not require the endless data entry. But these disk offerings were not the end of *Run5*. The magazine played a bigger role than just handing over data for new scenarios. It acted as a valuable conduit between the game players and designers.

### 4.3 Computer Games and Magazines in the 1980s

Dedicated computer game magazines first appeared in the 1980s. These magazines played a vital role in defining what a computer game ‘was’ and the development of the identity of the ‘gamer’. In his analysis of two early British magazines, Graeme Kirkpatrick traces the rise of the concept of “gameplay”.<sup>316</sup> He maps how game magazines changed from treating games as just another kind of computer program within microcomputing, to a distinct cultural practice with its own descriptive and technical vocabulary.<sup>317</sup> Like Kirkpatrick, Jaakko Suominen’s analysis of computer game magazines plots the formation of a vocabulary that is specific to the medium, addressing how game reviews evolved to develop their own criteria to describe the medium rather than referencing other media or discussing games as generic software. His work presents a close reading of the Finnish magazine *MikroBitti*.<sup>318</sup>

Mia Consalvo examines the idea that game magazines taught players how to be ‘gamers’ in a study of the US magazine *Nintendo Power* from

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<sup>315</sup> Ian Trout, ‘Editorial’ [1986] *Run5 Issue 1 1*.

<sup>316</sup> Kirkpatrick.

<sup>317</sup> Ibid.

<sup>318</sup> Suominen, ‘Game Reviews as Tools in the Construction of Game Historical Awareness in Finland, 1984 – 2010: Case MikroBitti Magazine.’



1988.<sup>319</sup> By the late 1980s the dominant discursive constructions of gaming practices had been established. These included both the idea of 'gameplay', as proposed by Kirkpatrick, and the criteria used to define a computer game, as profiled by Suominen. Consalvo's research proposes that this new vocabulary and the knowledge system provided by the magazines operated as a form of cultural capital to a generation of Nintendo game players. Focused on the audience for Nintendo games in the early 1990s, her analysis looks at how *Nintendo Power* magazine helped define an understanding of what a gamer 'is'. Using Gerard Genette's definition of 'paratext' referring to the assortment of discourses that directly inform the text from the outside, Consalvo reveals how the magazine shaped players' sense of the proper way to play videogames and argues for the magazine's importance as a 'paratext' for the way it structures and gives meaning to games.<sup>320</sup> She demonstrates that gaming capital was not simply located within a player's capacity to play a game well, but was also invested in knowledge about gameplay and the games. She demonstrates how *Nintendo Power* offered knowledge that could not be grasped from the game itself, and how the magazine provided its readers with opportunities to contribute to the discussion through letters, high scores, player polls, and the prestigious 'secret agent' tips.<sup>321</sup> This inclusion of reader input, Consalvo argues, was vital for the magazine's capacity to create a sense of the player as actively engaged in game culture rather than just being a consumer.<sup>322</sup>

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<sup>319</sup> Mia Consalvo, *Cheating: Gaining Advantage in Videogames* (MIT Press 2007).

<sup>320</sup> Gerard Genette, 'Introduction to the Paratext\*' (1991) 22 *New Literary History*, 261.

<sup>321</sup> Consalvo is dubious that readers were the actual source of many of the 'special agent' tips, which, she suggests, were most likely sourced from the offices of Nintendo. Consalvo.

<sup>322</sup> Consalvo singles out *Nintendo Power* from other successful commercial publications for its dedication to making its readership feel engaged in the Nintendo culture. Ibid. 24

*Run5* played an important role in supporting SSG's games. The magazine provided players with material that helped shape their gaming skills. *Run5*, however, does not simply sit within the trajectory of game magazines of the 1980s mapped by these earlier analyses. For whilst *Run5* was engaged with defining what a computer game was, it was not only part of the recent cultural construction of games, gamers and gaming associated with the microcomputer and console, it also belonged to the established tradition of wargames and, in particular, wargame magazines.

#### 4.3.1 Wargame magazines

The tradition of wargame magazines dates back to the 1960s with popular publications like *The General*, the mouthpiece of influential American wargame publishers Avalon Hill. In the 1970s and early 1980s, magazines played a central role in wargaming as a hobby. A survey, published in *Moves: Conflict Simulation Theory and Technique* magazine in 1970, reviews over fifty individual publications (Figure 10).<sup>323</sup> Jim Dunnigan, editor of *Strategy & Tactics* magazine and founder of SPI (Strategic Publications Inc) wryly explains this plethora of publications - "because wargamers are such a well-educated and literate lot, there are a disproportionate number of magazines serving the hobby."<sup>324</sup> The pleasures of wargames are both scholarly and analytical. The games themselves were apparatuses for investigation and experimentation. "The object of any wargame (historical or otherwise)" explains Dunnigan, "is to enable the player to recreate a specific event and, more importantly, to be able to explore what might have been if the player decides to do things differently."<sup>325</sup>

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<sup>323</sup> George Phillis and Martin Campion, "A Guide to Conflict Simulation Games and Periodicals" [1973] *Moves: Conflict Simulation Theory and Technique* 5.

<sup>324</sup> Dunnigan.

<sup>325</sup> *Ibid.* 13



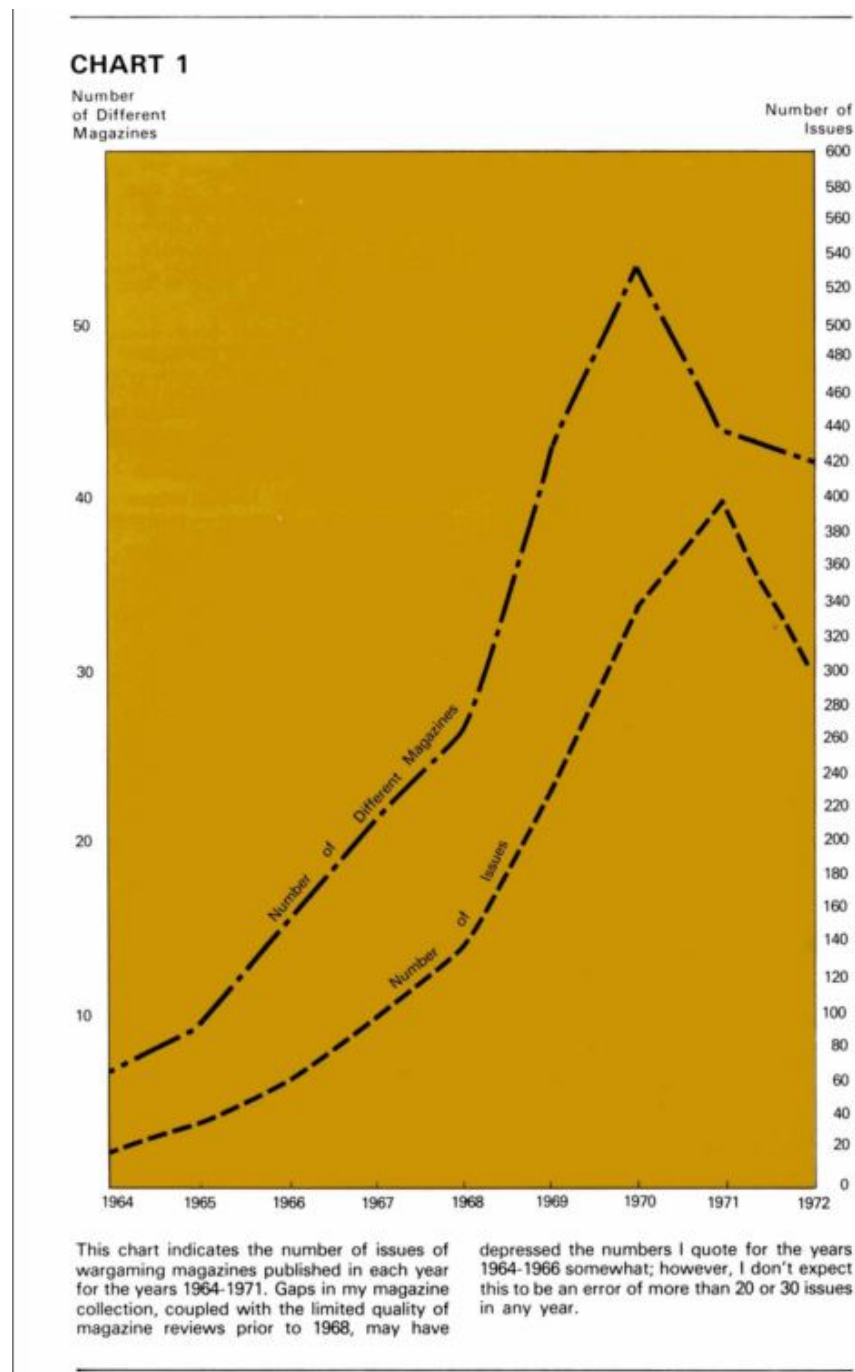


Figure 10: George Phillis and Martin Campion, “A Guide to Conflict Simulation Games and Periodicals” [1973] Moves: Conflict Simulation Theory and Technique p5.

*The General* proclaimed its purpose was “solely for the cultural edification of the serious game aficionado, in the hopes of improving the game owner's proficiency of play and providing a service not otherwise

available to the Avalon Hill game buff".<sup>326</sup> *The General* featured new scenarios, gameplay accounts and numerous articles on game tactics, game variants, and military history. This detailed investigation of military history is done primarily through the conversion of history into analytical data, its implementation and interpretation in Avalon Hill's game systems. As promised, the magazines provided resources with a direct relationship to support players' experiences of the company's games, teaching players how to manipulate the manual game systems, tweak the existing support players' experiences of the company's games, tweak the existing scenario, and design their own scenarios.<sup>327</sup> Players' voices are heard throughout the magazine, which featured a substantial readers' letters section, dedicated question and answer, and an "opponents wanted" classified section. Many articles even included a call-out for reader feedback regarding factual errors, game system performance, specialist knowledge and recommended game play strategies.<sup>328</sup>

#### 4.4 Manual Wargames as Paper Computers

SSG's magazine, like *The General*, directly serviced a player community, instructing them how best to play and personalise their game systems coupled with an invitation to a dialogue with the game creators. Rather than just a continuation of the tradition of wargame magazine culture in a new medium, *Run5* also brought something particular to its readership. The magazine taught manual wargamers how to play computer games. *Run5* facilitated a transition from manual game play to digital game play. It is easy to assume that there would be some natural evolution from the

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<sup>326</sup> Mission statement printed in the front piece of each issue of *The General* during the 1980s.

<sup>327</sup> *The General* introduced 'Computer Corner,' documenting their computer game releases, in 1988 in volume 25 number 1. The initial column was written by Bill Perchel, John Huff took over in subsequent issues.

<sup>328</sup> Surveys are a feature each issue of *The General*, asking readers what they are playing. *Strategy and Tactics* magazine were very keen on a player survey and some years ran thirteen voluntary surveys of their readers.

board game to the computer, particularly as board-based wargames are basically procedural systems. In 1981 Chris Crawford, a US developer known for his early critical engagement with computer game design, warns gamers against this misperception:

...wargames on personal computers will not be just like board-games... A computer wargame must be optimized to take advantage of all the strengths of the computer. At the same time, it must avoid the weaknesses of the technology. They will necessarily be very different from board-games.<sup>329</sup>

Crawford stated that the hardware of the microcomputer was hardly up to the task of handling the complex systems of manual wargames. Another issue he suggested was the lack of skilled programmers capable of crafting worthy AI from a microcomputer.

Despite Crawford's reservations on the capacity of microcomputers to support wargaming, their advantages were generally agreed upon. These include: instantaneous set-up; no maps and counters to keep track off; simpler rules as the computer does all the calculations and bookkeeping for movement, combat results, terrain, weather effects etc.<sup>330</sup> Dunnigan, however, shared Crawford's concerns about the computer's inability to match the flexibility and complexity of manual game systems. His other anxiety was that computer games did not reveal their internal workings in the manner of board games, reducing the kinds of engagement that gamers could have. The advantage of manual wargaming, he argues, is that it allows the player complete access to the game system. Dunnigan explains that to play a board game requires a detailed study of the manual, the rules and the assets, exposing all its workings to the player. This he identifies as

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<sup>329</sup> Chris Crawford, "The Future of Computer Wargaming" (1981) 1 Computer Gaming World 3.

<sup>330</sup> Ibid; Dunnigan; Brain Murphy, *Sorcerers & Soldiers: Computer Wargames Fantasies and Adventures* (Creative Computing Press 1984), 13

central to the appeal of wargames – so much so that some people did not even play the games, preferring just to read them and study them.

"Reading" games rather than playing them is quite common...

Many gamers "collect" games. They buy them, but never play them. This does not mean that they are not used. Quite often, the hobbyist will spend several hours with the game. The usual procedure is to lay out the map, examine the pieces, read the rules and scenarios and perhaps place the pieces on the map, but that is generally as far as it goes. The player has been satisfied with experiencing the dynamic potential.<sup>331</sup>

According to Dunnigan, much of the pleasure of a wargame was the tinkering with it, rather than actually playing it. He explains, "Just to sit down and attempt to develop different ... deployments for a particular game is an interesting exercise which many players indulge in... Tinkering is a low-hassle, mentally stimulating, take-things-as-they-come activity. Playing the game tends to be a bit more intensive even if you're only playing against yourself."<sup>332</sup>

Matthew Kirschenbaum confirms Dunnigan's view on the pleasures available in manual wargames for tinkering with the systems. He also remarks on the powerful impulse of narrative as another pleasure of wargaming; the procedural nature of the wargame supported narrative agency. A player could, for example, manipulate the game's data to generate narrative accounts of speculative history.<sup>333</sup> Kirschenbaum describes board wargames as "paper computers": open systems that could be taken apart and put back together again. Compared to their

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<sup>331</sup> Dunnigan.90

<sup>332</sup> Ibid.57-58

<sup>333</sup> Kirschenbaum, 'War Stories: Board Wargames and (Vast) Procedural Narratives.'

transparency, a computer game is a black box where the source code and underlying model remains out of reach.<sup>334</sup>

#### 4.4.1 *Run5* – as Design Guide

SSG addressed the cultural shift from the open system of the manual wargame by using *Run5* to provide its readers with information about how their computer game systems worked. *Run5* offer an important record of the transition of the manual wargame to the computer supporting the agency of players to continue to adapt game systems for their own pleasure. The original games themselves came packaged with design manuals. For example, *Carriers of War*, in addition to its fifteen page Player Manual featuring data for six scenarios, came with a twenty five-page Design Manual featuring a tutorial on how to build a scenario. *Run5* built on these guides, providing further information on both how the game systems worked and the computer's role. Roger Keating penned a series of articles for the magazine explaining to readers how the hidden systems within the computer operate. In issue 1, he explained his approach to designing in machine language. He introduces players to the limitations of the computer, sharing how designer, Ian Trout, had to "learn about computers and come to terms with the endless stream of memory constraints, design restrictions, interface problems and last, but not least, at the end of all this a computer opponent had to be there to provide a worthwhile contest".<sup>335</sup> Keating narrates how the necessities of programming in machine language dictated terms for Trout's design. He gives example such as how division had to be in powers of two and decimal points were banished. He takes the readers through the coding of a routine to measure and map distance between hexes, publishing the

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<sup>334</sup> Kirschenbaum, 'Archives of Wargames'; Kirschenbaum, 'War Stories: Board Wargames and (Vast) Procedural Narratives.'

<sup>335</sup> Keating, 'Programming and Design.'2

machine code in the magazine so its working is exposed. The article is one of a number by Keating featuring discussion of actual assembly code. SSG assumed that their players wanted to understand the logic of how the game systems work. In later issues he talked readers through: how the computer opponent operates in *Reach for the Stars*; the challenges of creating AI within the computer's limited memory; programming for map generation; and techniques for database construction.<sup>336</sup> Whilst playing computer games may not have provide the design education that board games offered, through *Run5*, SSG worked at ensuring their audiences understood what was happening within the "black box". The magazine provided players with information and ways of understanding how the operations of the computer impacted on gameplay.

In knowing how SSG's game systems worked on the computer, players were better able to fully enjoy the games and create their own scenarios. In its mission to educate readers on the potential of the game systems, *Run5* can be characterized primarily as a design magazine. Each issue had at least two new scenarios (see Figure 11).<sup>337</sup> The scenarios offered differing battles (new games) to play, but also demonstrated how the game system could be deployed; they operated as templates reinforcing the magazine's design focus. Other features included: the publication of design notes and tutorials; technical data on ships and planes; plus orders of battle. These resources were designed to facilitate deeper engagement with the game systems and assist gamers to build their own scenarios.

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<sup>336</sup> Roger Keating, 'Design and Programming: Roger Keating Discusses Intelligence' [1986] *Run5 Issue 4*; Keating, 'Programming and Design'; Roger Keating, 'Programming and Map Design' [1987] *Run5 Issue 5* 17; Roger Keating, 'Programming and Game Design' [1986] *Run5 Issue 2*.

<sup>337</sup> *Strategy and Tactics* magazine famously published two full game scenarios compete with board and pieces with each issue of the magazines. These utilised a set of manual game systems.

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Figure 11: Run5 advertised in *Computer Games World*, No.25, Jan/Feb 1986

Explanation of the relationship of programming to design is threaded throughout the magazine. Gregor Whiley's design notes for *Russia* (1987) in Issue 6 take the player through the allocation of memory, informing them how Keating had to scrounge memory to complete the programming of the game displays. Whiley's article is dedicated to explaining what the computer is doing, including why wargaming on the computer is more restricted than manual game play. Without naming names, he reflects

on how many computer wargames available then let the human player freely move their units, which resulted in an uneven contest because the computer could not hope to match the agility of the human imagination and respond as flexibly with its limited processing power. To address this issue, he explains, SSG creates its movement routines so that both human and computer use the same mechanics, and how this equitable environment creates better competition. He then describes how decisions are made and orders issued in *Russia*.<sup>338</sup> The game's routines are not simply chained, making for predictable results, but instead each routine is a separate decision. The result is that each routine then becomes part of the data accessed by any interrelated routines. This, argues Whiley, allows the AI to work with the computer's strength (i.e processing data) rather than pushing the memory limitations.<sup>339</sup>

Correspondence from players featured in the magazine reflects a keenness to understand what the computer is doing. In a regular Q&A column, SSG answered player queries. Many of these address the computer as black-box; for example, factors affecting combat that are not transparent to the player. SSG explain that some issues are caused by tasks that the computer struggles with, such as "vectoring fast task groups in *Carriers of War*", and the need to operate within the system's memory constraints. Sometimes questions address constraints on player actions, of which a number, it was revealed, were created by SSG due to their commitment to historical accuracy. For example, in *Carriers of War*, carrier fighters could not be launched unless a sighting was recorded; strike launches were dependant on the actual deck capacity of each ship; and the seaplanes

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<sup>338</sup> Gregor Whiley, 'Russia: Designer Notes' [1987] *Run 5, Issue 6* 29.

<sup>339</sup> Ibid.



could not launch unless the tender had been anchored. On the computer these conditions could be hard coded in, so had to be obeyed by players.

In contrast to the restrictions inflicted by the designers' desire for historical accuracy, there are also the quirks in the code and in the machines. If a player reached a score of 65536, the highest integer addressable by the Commodore 64 and Apple II their score was dropped to zero! To squeeze as much as possible out of the memory, *Carriers of War* used memory-saving tricks. One of these determined that when the number of planes in the scenario reached over 1012 the system then handled planes as multiples of two, suddenly preventing players from creating any odd numbered squadrons. An additional frustration for scenario designers was the AI's insistence on aborting missions if a nation had no carriers. This made it impossible to create scenarios protecting transports. Players, however, found a way around this, tricking the computer by creating a carrier surrogate.<sup>340</sup>

SSG were more than happy to explain how their game systems work. They would willingly provide detailed explanations of how weather and time of day affected gameplay and the effect resulting from the presence of a randomizing element in each decision made by the computer.<sup>341</sup> A request to publish the actual details of their combat mechanism so that players could calculate the success or failure of a mission before embarking on it, however, is met with the following explanation of wargaming on the computer:

SSG does not wish to produce games that must be played on a calculator. The whole idea of using the computer is to remove

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<sup>340</sup> SSG, 'Q&A' [1986] *Run5: Issue 2* 28.

<sup>341</sup> Ibid.

the burden of bookkeeping from the player. This also enables us to remove information that an equivalent board game would have to present.

We see this as a bonus. Players should have to make decisions based on the same sort of information as the commanders that they are emulating. Using the computer also allows the mechanisms to be quite complex and detailed. Since all combats are treated individually, working out the figures for even one mission would be quite a job, as well as a waste of time in terms of getting an advantage in the game. That sort of stuff is best left in the computer, where it belongs.<sup>342</sup>

Even the irregular reviews of other company's computer games can be understood as guides to teach wargamers how to be computer gamers. A review of SSI's *Battle of Antietam* (1985, *Apple II*, *Atari*, *C64*) in *Run5* (Issue 3), by subscriber Mark Holman, is an example of how the design of the computer game is interrogated in relation to more traditional board-gameplay. At this moment in history the role of the computer is the focus of the reviewer's discussion.<sup>343</sup> The author's careful assessment of the potential and the limitations of the microcomputer technology on the wargaming illustrate media historian Lisa Gitelman's observation that new media technologies require new "'protocols'; behaviours and infrastructure that eventually become 'self-evident' and invisible as the result of social process".<sup>344</sup> In 1986, when Holman is writing his review, any 'behaviour' of the computer-based wargame that is distinct from that of the manual wargame required explanation. Later, as Gitelman explains, these

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<sup>342</sup> SSG, "Q & A" [1986] *Run5*. 32.

<sup>343</sup> Mark Holman, 'Battle of Antietam 17th September, 1862' [1986] *Run5 Issue* 3. 18.

<sup>344</sup> Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (MIT Press 2006)7.

behaviours become invisible, in this case absorbed by new protocols for gameplay. The early issues of *Run5* teach manual wargamers how to be computer wargamers. In later issues, this focus on the functioning of the computer disappears as it becomes unnecessary.

#### 4.5 *Run5* - Dialogue with Players

Through *Run5*, SSG cultivated a conversation with its audience and communicated directly to gamers about forthcoming games and work-a-day matters like errata and the occasional idiosyncrasy or bug in the game systems. SSG's relationship with gamers was a convivial one and, like *The General*, welcomed feedback. The magazine kept SSG's players informed about the work being carried out by SSG, discussing titles under development and keeping the reader abreast of their progress.<sup>345</sup> Staff are credited and thanked for their contributions, new staff announced and SSG's trips to the Origins International Game Expo in the United States conference well documented. The international focus of the magazine is highlighted by the absence of reference to SSG's appearances at local Australian game conferences, including Canberra's Cancon where they ran an annual competition. SSG's participation in these events is, however, found in local Australian magazine, *Breakout*, which celebrated SSG's contribution and participation in the local wargaming community, particularly noting their regular hosting of computer gaming competitions within the predominantly roleplaying and board gaming event.<sup>346</sup>

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<sup>345</sup> A rather poetic feature of the *Run5* life span is the *Battle of Appomax*, a game that is featured in the first issue of the magazine and whose impending arrival weaves its way through the next decade of issues. The much desired title never sees the light of day, originally too ambitious for the early microcomputer it becomes a causality of the changing nature of computer games.

<sup>346</sup> For example, *Breakout* documents how, at the 1985 Cancon convention in Canberra, SSG ran a *Reach for the Stars* tournament. At Cancon88 SSG ran tournaments for *Halls of Montezuma* and *Decisive Battles*. See *Breakout*, 4, 1, 1984, 28; 5, 1, 1985 28-29; 8, 1, 1988. 42

Gregor Whiley's amusing narrations of the in-house SSG game challenges that featured in *Run5*, present the design team as dedicated gamers, like their readership. These articles are fascinating historic records of SSG's games as played by their designers. Newman champions the need to record the played game, ideally in its historical moment. He proposes that these records are more significant for preserving game history than keeping games playable as software.<sup>347</sup> *Run5*'s written reports of the games creators competitively playing their own games with each other offer another level of information.

*Run5* also chronicles changing commercial realities that the company and industry faced. As more games entered the market, a struggle ensued over retail shelf space. In 1989, SSG makes an appeal to its players in the editorial of *Run5* Issue 12:

It seems that a number of the large software distribution chains in the US have decided to dramatically reduce the number of titles that they carry. In this process, Historical Wargames are slated for massive reductions or even elimination as a category. Obviously, this will mean a reduced supply. We will find it harder to sell games, and you will find it harder to buy them...<sup>348</sup>

Historical wargames were particularly struck by the crowding of the market as computer games became increasingly mainstream and were identified more with accessible fun, childhood, and the plug-and-play ease of console games.<sup>349</sup> The responses published in *Run5* to SSG's appeal document how people purchased games in the era. The letters describe the

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<sup>347</sup> Newman, *Best Before: Videogames, Supersession and Obsolescence*.

<sup>348</sup> Ian Trout, 'Editors Chance' [1989] *Run5: Issue 12*. 3.

<sup>349</sup> Consalvo; Kirkpatrick; Suominen, 'Game Reviews as Tools in the Construction of Game Historical Awareness in Finland, 1984 – 2010: Case MikroBitti Magazine.'

kinds of local stores and mail-order services used to purchase games across the international audience. They also describe the rise of the fantasy genre, plus the proliferation of driving and flight simulators, as the market for games changed from early adopters of technology (including wargamers trying out the new medium) to a more diverse audience for games.<sup>350</sup> The letters include a precise description from Major Ronald Burkholder as to the American Military's investment in computer wargames and how they are distributed through the Army and Air Forces Exchange Service. He reassures SSG of the solid representation of their games in the Military's stock. The many other responses, however, indicate SSG was right to be concerned, for whilst the military is taking care of wargamers, the landscape for computer game sales was changing.<sup>351</sup> Robert Gurske of Ware Neck, Virginia, USA compared the serviceable stock of computer wargames at the local hobbyist store, Waldern Software, with the new mall chain, Electronic Boutique, where few computer wargame titles were stocked and only the very latest releases of any computer and console games were available.<sup>352</sup>

We learn the most about *Run5*'s user community in the letters. Unsurprisingly, there is a heavy American focus, but gamers come from all over the world.<sup>353</sup> There was a strong military presence that stretched from generals to privates, and *Run5* received a number of letters offering minor corrections to ships and squads in SSG's games from those who served.

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<sup>350</sup> Several readers cynically urge SSG to publish a fantasy strategy to capitalise on the genre's popularity; ironically in 1990 SSG publish Steve Fawcner's fantasy strategy game *Warlords* (after Keating redesigned the games AI with Fawcner). Its market success and that of its sequels brought a healthy injection of funds to the company.

<sup>351</sup> 'Letters to the Editor' [1989] *Run5 Issue 13*. 3.

<sup>352</sup> Ibid. 14

<sup>353</sup> The mailing list for *Run5* gave SSG a sense of who their customers were. Roger Keating recalls that one of their subscribers was the Italian Ambassador based in Moscow. In their 1985 press they state that 85% of their product is sold in America, 10% sold in Australia. The big surprise is their next largest market was Japan. Strategic Studies Group, 1985 Press Release.

Knowledge of military history was highly valued across the community. It formed a central part of the cultural economy and there was a prevailing critical engagement with historical narrative and speculative history.

To encourage feedback and content-sharing, *Run5* featured regular scenario design competitions, with winning scenarios published within the magazine.<sup>354</sup> The scenario design competitions provided an opportunity for SSG to see how a cross-section of players used their game systems and to share work created by its community. The winning entries of SSG's scenario design competitions confirm the value placed on historical accuracy, but it is the ingenious ways that the scenario designers manipulate the game systems to stay true to historical simulation that was most admired. The winner of the inaugural *Carriers of War* competition, a Leyte Gulf scenario, was commended not just for its careful research and its historical veracity, but also for the creator's subtle manipulation of the game system to ensure the battle unfolded accurately. Ian Trout admired another entry, also featuring Leyte Gulf, which included a Shimpu plane that was used for kamikaze attacks in the battle. Trout was impressed by how the scenario's author has exploited the game system to produce an aircraft that is designed to fly only once within the simulation.<sup>355</sup>

The scenario design tools were, for many players, the reason for their ongoing engagement with SSG's games. The letter section often featured praise for their game systems and requests for additional features. In his 1987 letter Robert Sandler states:

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<sup>354</sup> Cash prizes were offered to competition winners; \$500 each for *Carriers of War* and *Europe Ablaze* scenarios launched in Issue 1, and \$1500 for the *Battlefront* competition of the next year. Other scenarios, if published, received a fee of \$100.

<sup>355</sup> Ian Trout, 'Editors Chance' [1986] *Run5: Issue 4* 3. Kenneth G. Wastracks winning entry is published in Issue 5 of *Run5*. Trout comments that Daniel H. Antolec's scenario with its Shimpu planes was unlucky not to win so worthy was it. It was not published in the magazine possibly because it modelled the same battle as the published winner.

I own many computer games, covering many subjects, but I find your games to be the most flexible and ultimately the most long lasting... So I would like to put in my vote to continue structuring your games with the design kits. Even, as in the case with Russia, it means just being able to totally control every factor in the game.<sup>356</sup>

The flexibility of SSG's game design systems distinguished them from the competition. Paul M. Nation from Little Rock Arkansas writes to *Run5*, describing how he had dedicated many hours trying to break the copy protection on SSI's games to modify the databases before discovering SSG's games. He explains "that until SSI allows for scenario variations, SSG will be the supplier of wargames in my future".<sup>357</sup>

#### 4.5.1 Co-creative Audiences and Community

In fostering co-creation, SSG's game systems contained a number of elements that we associate with a much later era in videogame history. Game systems that allow their audience to be co-creators is a concept more commonly associated with the rise of mod culture in the 1990s.<sup>358</sup> Reflecting in 2006 on the changes that modding brought to PC game culture, Henry Lowood affirmed, "when a computer game is released today, it is as much a set of design tools as a finished product"<sup>359</sup>. Through *Run5*, SSG produced an analogue system for community sharing. The potential for player productivity was built into the games themselves and was an assumed outcome, one that then could be discussed and disseminated across the community through SSG's *Run5* magazine.

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<sup>356</sup> Robert Sandler Blytheville, Ark. USA. *Run5* Issue 6 1987. 3

<sup>357</sup> Paul. M. Nations, Little Rock, Arkansas, USA. *Run5*, Issue 11 Jan 1989. 3

<sup>358</sup> In the history of videogames player productivity is mostly associated with the rise of the mod scene of the 1990s. Whilst there is a prehistory to hacking and modding, it is id Software's release of the source code for *Doom* (PC) in 1994 (one year after the game's commercial release) that marks the ascent of the activity.

<sup>359</sup> Lowood, 'Game Studies Now, History of Science Then.' 29

In supporting co-creation through their game systems, SSG foreshadowed the incorporation of modding as a business model. The type of productivity offered by their game systems fostered deeper engagement with their product, building brand loyalty and extending the life of their games. Lowood and Julian Kücklich identified these features as some of the commercial advantages that the rise of modding in the 1990s brought to the game industry.<sup>360</sup> The creation of new scenarios by SSG and their players extended the shelf life of SSG games and was counter to the overall trend in computer games, where rapid advances in technology quickly rendered software and systems redundant. SSG's 1980s games and game systems continued to sell into the 1990s. It was a model that was not without problems, as retailers did not commonly stock older games. Even some of SSG's newer players were unaware of the age of some of the games. Issue 19 of *Run5*, from 1993 features a letter from an irate Australian player who berates SSG for their IBM technology stuck in 1985. He criticises them for their horrible EGA graphics, the lack of pull-down-menus, and mouse interface but concedes that SSG game AI still surpasses "these supervGA modem ready state of the art games".<sup>361</sup> *Run5* editor Stephen Hand recommends checking the date on the games box explaining, "Most of the games you are so down on were designed several years ago. They are not '90s technology but they are still selling, why?, because they were great games when they came out and they still are".<sup>362</sup> Where most games companies back catalogues quickly became worthless, SSG's games continued to hold value. It was a double-edged sword though, as they had to keep servicing the game systems and moving them onto new hardware

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<sup>360</sup> Lowood, 'Game Engines and Game History'; Julian Kücklich, 'Precarious Playbour: Modders and the Digital Games' [2005] *The Fibreculture Journal* <<http://five.fibreculturejournal.org/fcj-025-precious-playbour-modders-and-the-digital-games-industry/>>.

<sup>361</sup> "Letters" [1993] *Run5 Issue 19*. 47.

<sup>362</sup> *Ibid.*



rather than focusing all their energy on developing for the capabilities of new hardware.

## 4.6 Audiences Online

In January 1988, SSG went online with CompuServe and Applelink. Gregor Whiley recalls that their biggest community was on CompuServe, where SSG hosted a forum for their games. Subscribers to CompuServe could log in to SSG's forum with their numerical user ID and browse the text-based forum topics. Here SSG made announcements about their games, joined player chat, and most importantly, answered questions related to the game systems and provided product support for their games.<sup>363</sup> At this time there were few places that players could go to ask for help regarding computer games. Company magazines like *Run5* were very unusual. As SSG's games were released for multiple microcomputer platforms, each with their own idiosyncrasies, there were lots of sound technical reasons for the games to fail to work properly. Whiley recalls how valuable CompuServe was at the time, "as people would take their games home and they would not work on their machines!"<sup>364</sup> CompuServe was a way to get real support for technical issues. The forums were also a wealth of information on the game systems and their rule sets, providing discussion on gameplay strategy and assistance with scenario design issues.<sup>365</sup> Online support was, at the time, a large part of Whiley's job. When composing replies to questions on CompuServe, he recalls taking into account that he was not just speaking to the lone individual, but representing SSG to the entire online community. SSG expanded their online services for players over the next few years, although Whiley and

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<sup>363</sup> Keating recalls the original forum supported 120 characters a second. Recorded Conversation Gregor Whiley and Roger Keating, 2 March 2014

<sup>364</sup> Recorded Conversation Gregor Whiley and Roger Keating, 2 March 2014.

<sup>365</sup> Recorded Conversation Gregor Whiley and Roger Keating, 2 March 2014.

Keating can no longer recall the time-frame for the new services they offered. Play-by-email was to become an important feature of later SSG games, with the creation of special systems in-game to prevent cheating. They do not remember CompuServe's email facility being used for embryonic play online in the tradition of play by mail (communicating moves in an asynchronous manner). Nor do they remember if, or how, they actually used CompuServe for game patching, but it is possible that this happened in a primitive way before moving to the web. The arrival of the World Wide Web shifted users away from the gated user-pay community of providers such as CompuServe and by 1996 SSG had a dedicated webpage.

In 1996 SSG stopped printing *Run5*. The costs outweighed the revenue. *Run5*'s audience had never really grown from the faithful gamers who had been subscribers from the beginning and, although these subscribers were all over the world from Tokyo to Leningrad, the internationalism of the audience was just another cost. Online, SSG promised that their website would be able to provide support, information and new scenarios for free. There would be no constraints on space when replying to letters and queries and these interactions would be easier and faster.<sup>366</sup> The new generation of computers ran game systems whose scenarios required substantial data — far too laborious to type in. Scenarios for *Carriers of War II* (1993) built in the elaborate *Carriers of War Construction Kit* were sizable creations. *Run5* online promised to continue the flow of articles and scenarios. But it never really did. Issue 25 went up online but that was it for the discursive structure of the magazine with its letters and player contributions. SSG used the web for news about their games and continued

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<sup>366</sup> Stephen Hand, "Editor's Chance: Run5 Is Dead: Long Live Run5" [1996] *Run5 Issue 25*. 2.

to share scenarios online with their player community and these can be found on the archived pages of SSG's website on the Wayback Machine. The discussion forums, however, are not archived. Lost, too, are the discussions that occurred on CompuServe and Applelink. Those records vanished with SSG's cancellation of their subscriptions to the commercial services. Email became a popular means of communicating directly to SSG but, unlike the published letters, these correspondences were not archived.

Whereas SSG still have copies of all issues of *Run5*, they no longer can access their early online communications with players. The lack of records of their original website and the conversations and material hosted on service providers CompuServe and Applelink are an example of the fragility of digital records. Companies did not value these resources when they became out-dated, surpassed by superior web technology, or made redundant by the next generation of company games. Records hosted on services such as CompuServe disappear when an account is closed or the service provider shuts down, vaporising important elements of game history.

## 4.7 Discussion

The case study presented in this chapter considers the reception of Australian videogames in the 1980s through an analysis of *Run5* SSG's Magazine. The analysis uncovered how SSG's games and magazine supported a culture of co-creation and helped transition wargamers to the new medium of the computer. The exploration of SSG's dialogue with the players and the revelation of the importance of user productivity presented new understandings of the history of this era. Documenting the interplay of local and global history, this type of historical research supplies the curator with narratives that will define both exhibition and collection parameters for videogames of the era. *Run5* magazine provides a valuable account of

the user productivity that surrounded SSG's wargames. It shows a clear lineage to an established culture of wargaming that already had its own publication traditions, vocabulary of gameplay and support for user-made content before the arrival of the microcomputer. Early issues of *Run5* explained how the gameplay of the manual wargame had been adapted to function on the computer. The magazine was directed at wargamers who were familiar with the procedural systems of manual wargames that operated like "paper computers", with all their workings exposed for the player to tinker with. Describing how the hidden processes of the computer worked to deliver the gameplay was part of *Run5*'s mission, thereby teaching players how to design within SSG's computer game systems.

The early colonisation of the microcomputer by wargames presents an alternative historical narrative to both of the more familiar stories; the cloning of arcade games and the migration of the text-adventure from laboratory mainframes.<sup>367</sup> Moreover, *Run5* evidences how important support for the wargamers to modify and adapt scenarios on the computer was deemed by SSG. *Run5* played a critical role in facilitating this activity and the ongoing dialogue it offered with SSG's audience survives as a historical record of both the company and its community of players.

Wargames are an often forgotten part of videogame history and little attention has been paid to the central role that user-generated content played within wargame culture in the 1980s. Copies of *Run5* magazines have been made available on the Popular Memory Archive as downloadable PDFs, forming part of SSG's profile and associated resources

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<sup>367</sup> Tristan Donovan, *Replay: The History of Video Games* (Yellow Ant 2010); John Borland and Brad King, *Dungeons and Dreamers: The Rise of Computer Game Culture from Geek to Chic* (McGraw Hill/ Osbourne 2003); Mark JP Wolf (ed), *The Video Game Explosion: A History from Pong to Playstation and Beyond* (Greenwood Press 2008); Mark J. Wolf (ed), *Before the Crash* (Wayne State University Press 2012).

displayed there. This act has initiated discussion from members of SSG's early community, subscribers to the original 1980s magazine. One of the responses Play it Again received to its announcement that *Run5* was to be scanned and shared online was from Don Ursem.<sup>368</sup> Ursem's enthusiasm for the news was not fuelled by nostalgia but focused completely on *Run5*'s value as a design resource for working in SSG games systems to simulate speculative histories of warfare. He intended to use SSG's *Carriers of War II: Construction Kit* (CCAW) to assist an author friend to "game" some of the threads of an alternate history for his next book. He writes:

Even today in 2014, CCAW seems the best ever classic naval warfare simulation ...the only one allowing both ship and air operations to be accurately modelled ...RUN 5 Magazine contained a wealth of now priceless how-to information on building extra ships and custom scenarios for CCAW, as well as similar coverage for other SSG games. As such, RUN 5 is not just another old computer magazine...but truly a goldmine of wargamer information... and a true piece of computing history.<sup>369</sup>

It is fascinating that *Run5* continues to be valued as a design resource by its original community of readers. This creates interesting questions for the collecting and exhibiting documentation that captures what audiences did with the design object, what Newman describes as the "played with game".<sup>370</sup> The paratextual materials that surround games of this era have been clearly identified for their importance to preservation and Newman

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<sup>368</sup> Don Ursem was designer of games of the early 1980s including *Star Hyperion* (1981) for the Atari 800, a strategic simulation game of war in the far future.

<sup>369</sup> Comment posted on Helen Stuckey, "Run5 Magazine - How SSG Joined The Dragon, White Dwarf and The General," *Play It Again: Remembering 1980s Gaming*, 2013, <http://playitagainproject.org/run-5-magazine-how-ssg-joined-the-dragon-white-dwarf-and-the-general-to-talk-with-their-people/>.

<sup>370</sup> Newman, *Playing with Videogames*.

has made a case for their ability to be more informative about the played game than playing the “preserved software”.<sup>371</sup> *Run5* is a record of players’ relationship to SSG games and game systems over a decade. It preserves a sense of the changing relationship between the audience and the microcomputer and further demonstrates the importance of co-creation. Its traditional print format has made it a stable archive compared to the fragility and ephemerality of online resources from a later era. *Run5*’s role as a user’s guide to SSG’s game systems makes it invaluable for understanding the games and their associated player communities. Furthermore, as Ursem’s letter reveals, it also remains a key resource for activating those game systems today.

#### 4.7.1 In summary

The ability to share all copies of *Run5* on the Popular Memory Archive (PMA) web site blurs the distinction between the open access of the library and the selective, mediated access of the exhibition. In providing access to *Run5* and inviting discussion and remembrance, the PMA allows for the inclusion of other narratives rather than presenting a ‘canonical memory’ authored by the Museum. Ursem’s comments, for example, address SSG’s early game systems not through the lens of history or nostalgia, but as narrative engines that continue to be creatively relevant to their users.

Researching Australian game history, Chapters 3 & 4 have examined two Australian companies from the early 1980s who successfully created international identities for themselves and their games. Rather than

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<sup>371</sup> James Newman, “(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay” (2011) 6 *International Journal of Digital Curation*. 109 <<http://www.ijdc.net/index.php/ijdc/article/view/186>> accessed 18 April 2012; Newman, *Best Before: Videogames, Supersession and Obsolescence*; Consalvo; Authors Devin Monnens and others, “Before It’s Too Late: A Digital Game Preservation White Paper” (2009); Henry Lowood, “Video Capture : Machinima, Documentation, and the History of Virtual Worlds” in Henry Lowood and Michael Nitsche (eds), *The Machinima Reader*, vol 10 (MIT Press 2011); Jerome McDonough and others, “Preserving Virtual Worlds Final Report” (2010) <<https://www.ideals.illinois.edu/handle/2142/17097>>.

focusing on this success, or the games themselves, I have examined contextual histories that explore questions of identity and the construction of game history. Melbourne House/Beam Software's origins are revealed to lie within arcane colonial publishing laws. Melbourne House's microcomputing books that taught users to code and write games are identified as a central part of the burgeoning videogames culture for the era, rather than simply dismissed as a precursor to the arrival of 'real' videogames, commercially developed and packaged up for consumption.

Chapter 3 examined how videogames evolved from "something to do on a microcomputer" to an industry. Chapter 4 examined how one company, SSG, assisted strategic wargamers to adopt the microcomputer as a medium for their hobby. SSG's games were designed to support the productive user culture of scenario building and co-creation that already existed for wargames. SSG's games and their publication, *Run5*, provide a concrete, documented encounter with the material origins of electronic wargames one often ignored in game historiographies that privilege videogame origin stories of the arcade and the computer lab. The evidence presented across these chapters calls into question dominant notions of authorship for both games and game historiography. In these chapters the materials available to the historian are discussed in relation to how they represent authorship. I have shown the value of local history as a form of emancipatory history that questions what gets represented and what gets left out of game history.

The Australian histories examined in Chapters 3 and 4 reflect on both local and global stories of the development of the industry and the reception of games for the microcomputer. They identify methods available to the historian including oral history and archival studies of paratextual materials, and reflect on the significance of fan archives online. In the next

chapter, I examine what types of materials can be collected to document and display historical videogames in order to help audiences understand individual works as designed, as experienced, and as interdependent with their technology platforms, and also how to reflect on their place within broader societal and media cultures.



## Curating The Hobbit

## 5.1 Introduction

The previous two chapters (3 & 4) have addressed the task of researching the history of Australian videogames from the 1980s. These histories address key research questions of this thesis, identifying significant stories of the production and reception of Australian videogames in the 1980s. They inform the following investigation of the curation and collection of Australian videogame history. Historical research is an established part of museum curation. Hans Ulrich Obrist identifies how, over time, the curator's role within museums has coalesced around four functions. These are: the preservation of collection artefacts that collectively tell a nation's story; acquisition of new work; contribution to history through scholarly research; and exhibition making. Today, he notes, exhibition making is more closely associated with the term 'curating' than its earlier central role of collections caretaker.<sup>372</sup>

This chapter presents a focused discussion about exhibiting *The Hobbit*, a text adventure game designed by Australian development studio Beam Software and first published in 1982 by Melbourne House. In a detailed reflection on the game, I examine how videogames can be displayed. I address Lowood's question, "what is the game – an experience or an artefact?", exploring how games might be understood and exhibited as both designed artefacts and experiences. I propose that to capture this complexity requires a shift from a traditional object-based method of display and collection. *The Hobbit* provides an interesting case study as the game was published for multiple platforms, producing several distinct

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<sup>372</sup> Obrist is discussing contemporary art rather than scientific or natural history artefacts but, as with MoMA's Architecture and Design collection situated within an art museum, this position concords with ACMI's cultural role and my training as an art and design historian. Hans Ulrich Obrist, *Ways of Curating* (Allen Lane 2014), 25.

versions, and the game's open-world design ensured that no two play-throughs were alike.<sup>373</sup>

The discussion is informed by my experiences working as the Games Curator at the Australian Centre for the Moving Image (ACMI) where, in 2006, I exhibited *The Hobbit* as part of the exhibition *Hits of the 80s: Aussie games that rocked the world*. The game was surprisingly challenging for audiences to the exhibition, many of whom found the text adventure's gameplay alien and difficult to engage with. The historic status that made the game such a strong subject for investigation within a cultural institution, also made it less accessible to audiences as an actual game.<sup>374</sup> This experience raised a number of questions about videogames in the gallery. These include: How can the experience of playing historical games in the gallery be more meaningful for contemporary audiences? What other kinds of information could be displayed to assist audiences to appreciate the significant characteristics of a game? How can we communicate the distinct qualities of a historical period and the broader culture that enmeshed players of the era? I address how museums might include the strategy of capturing and displaying the experiences of original players. I propose that, as well as documenting the broader culture of its reception, player stories can reconnect contemporary audiences with a sense of what makes the work significant. Collecting players' memories of the game constitutes another way of 'remaking' the game.

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<sup>373</sup> Helen Stuckey, 'Exhibiting The Hobbit: A Tale of Memories and Microcomputers' in Carl Therrien, Henry Lowood and Martin Picard (eds), *History of Games International Conference Proceedings* (Kinephanos 2014).

<sup>374</sup> Ibid. I was not prescient enough at the time to conduct formal research and interviews to gather real data. This understanding of visitor responses to the game is gauged from time spent in the Games Lab talking to visitors and from regular discussions with Games Lab's invigilators. Games Lab invigilators were encouraged to assist visitors with gameplay to improve the quality of visitor experience in the gallery. Invigilators were also encouraged to play the games themselves to ensure they had the knowledge to assist visitors.

In addition to the voices of players, museums need to collect player-created artefacts, such as walkthroughs and speed runs, that exist as legacy items for the work. Player-made walkthroughs document the performance of individual players within the game systems. Walkthroughs are both interpretative and descriptive of playing a game. The player-created *Hobbit* artefacts, some produced in the 1980s and some created later, are able to provide illustrations of the game's complexity more effectively than playing the historic game may. James Newman argues that player-produced walkthroughs and gameplay records may, in fact, be more important to videogame preservation than saving gamecode.<sup>375</sup> He states that gameplay recordings offers the best understanding of both the game's behaviour as a work of design and the performance of the player within that system, that these materials can be more capable of communicating the work than access to the software itself.<sup>376</sup> I suggest that the display of player-made artefacts such as walkthroughs can inform audiences more deeply about a historical game than hands-on gameplay. They can also make the experience of hands-on gameplay more meaningful.

### 5.1.1 The Hobbit

*The Hobbit* is a text adventure game based on J. R. R. Tolkien's book. One of the early hits for the ZX Spectrum, it went on to be ported to eight other microcomputers and sold over a million copies.<sup>377</sup> It was the creation of Beam's part-time student designers, Veronika Megler and Philip Mitchell. They had complementary approaches to design. Megler describes her creative process as working with large conceptual leaps in to the unknown, then proving that they worked for "most cases". In contrast, she explains

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<sup>375</sup> James Newman, "(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay" (2011) 6 International Journal of Digital Curation 109, p110  
<<http://www.ijdc.net/index.php/ijdc/article/view/186>> accessed 18 April 2012.

<sup>376</sup> Ibid.

<sup>377</sup> Milgrom, Alfred, Interview, Helen Stuckey 20 March 2013

Mitchell was “more of a logic-driven perfectionist”.<sup>378</sup> They worked well together, trusting each other. Together, they developed the inventive systems of *The Hobbit*.

The game’s parser,<sup>379</sup> ‘English’, created by Philip Mitchell, extended the conventional two word noun-verb input popularised in the Scott Adams Adventure International games (1978-1985), to allow sentences combining verbs and prepositions.<sup>380</sup> Players could even use the parser to give complex instructions to non-player characters for example “SAY TO THORIN “UNLOCK DOOR WITH CURIOUS KEY”. *The Hobbit*’s database had approximately five hundred words, impressive in terms of the ZX Spectrum’s limited memory capacity. Players were not informed of the extent of the game’s word recognition, so determining the game’s vocabulary was part of its challenge. Mastery of a game’s parser, or ‘learning to operate the text’, is described by games scholar, Nick Montfort, as one of the particular pleasures of playing text adventures.<sup>381</sup> Despite the parser’s possibilities, Mitchell complained to 1980s games journalists that most players tended to resort to the conventional two word text adventure commands.<sup>382</sup>

More interested in database development than computer games, Megler was not much of a gamer but had played William Crowther and Don

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<sup>378</sup> Jimmy Maher and Veronika Megler, Maher and Megler (Personal communication 20-23 November 2012)

<sup>379</sup> A text adventure’s parser is the program that receives typed input from the player in the form of word commands. Usually, words with the same meaning are turned into the same word e.g. verbs such as “look” & “get” nouns such as “map” & “sword”. The parser breaks them up into parts (for example, the nouns (objects), verbs (methods), and their attributes or options that can then be managed by the other programming. Parsers are limited, however, and the larger the vocabulary the more possibilities for the player and the less frustration with guess the “verb” and “noun” issues.

<sup>380</sup> Alfred Milgrom hired a Linguistic student Stuart Richie who was also studying programming at Melbourne University to contribute to the parser design. Despite Richie receiving credit on the games, Megler recalls that Mitchell was very much the sole author of the parser. Ritchie’s contribution is, however, played up in a number of press interviews from the 1980s.

<sup>381</sup> N Montfort, *Twisty Passages: An Approach to Interactive Fiction* (MIT Press 2005).

<sup>382</sup> David Kelly, ‘Just Hobbiting Along’ [1982] *Popular Computing Weekly* 11.11

Wood's *Colossal Cave Adventure* (1977) on the university mainframes. She found its world static with disappointing mechanical characters, and she was frustrated by the use of puzzles whose pre-scripted actions simply required you to guess the right verbs. She wanted to create a world that had depth, where the other inhabitants felt alive with purpose, and players could use the environment to solve puzzles.<sup>383</sup> She built *The Hobbit* as a dynamic simulation. Each object in the game was assigned a set of characteristics and the player could interact with the object based on those characteristics. By feeding the database of non-player characters and creatures, each with their own list of possible actions, through the same code used for the player's actions, Megler's gameworld allowed the non-player characters and creatures to 'play themselves' each turn. The open world that Megler created, coupled with the randomising routines developed by Mitchell, ensured that the game played differently every time. *The Hobbit* allowed players to encounter situations and create solutions that the designers had never considered. It was one of the earliest games to offer this kind of open-world play.

### 5.1.2 Exhibition as a Critical Lens

A key collection strategy, recommended by both the 'Preserving Virtual Worlds Report' (PVWR) and the IGDA White Paper for archiving videogames, is to secure the developer's design records and the game code.<sup>384</sup> In the case of *The Hobbit*, created over thirty years ago by a company that no longer exists, there is no known documentation of the game's design process and no access to source code or design materials. Nor is there the opportunity to reach out to a vital player community to ask

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<sup>383</sup> Maher, "The Hobbit"; Jimmy Maher and Veronika Megler, Maher and Megler (Personal communication 20-23 November, 2012).

<sup>384</sup> Monnens and others; McDonough and others; David Anderson and Janet Delve, 'Volume 3. Gaming Worlds, Virtual Worlds' in David Anderson, Janet Delve and Milena Dobrova (eds), *The Preservation of Complex Objects Symposia* (JISC 2013) <[http://www.pocos.org/images/pub\\_material/books/pocos\\_vol\\_3\\_final.pdf](http://www.pocos.org/images/pub_material/books/pocos_vol_3_final.pdf)>.

them to document their experiences. *The Hobbit* must be ‘assembled’ though the act of curation. The lens of the exhibition process can help consider particular properties of a work, as exhibition creates specific contexts and relationships in which to examine works. Exhibition is about creating a series of connections between objects and, through their proximity, revealing certain shared or unique traits, tropes and dialogues. For its 2013 exhibition *Applied Design*, the Museum of Modern Art (MoMA) exhibited selected videogames with other works of contemporary design including experimental architecture, vessels and a unique wind-powered de-miner for clearing mine-fields. The curators made a conscious effort to remove all traces of the displayed videogames’ “fetishistic hardware” from the gallery. Curator Paulo Antonelli explained that they wanted to show the work as interaction design, uncluttered by any paraphernalia or nostalgia associated with the games’ hardware.<sup>385</sup> The display refined the focus so that the works were distanced from the story of games and people’s childhood memories. Instead the focus was on their features as works of interaction design, from their fonts to the kinds of interactivity they offered. The curators’ ambition was to draw videogames into a discourse on the aesthetics of interaction design<sup>386</sup>

Exhibitions contextualize work. They can be designed to interrogate and ask critical questions of reception and production, or to test assumptions that surround a work. Exhibitions can expose, celebrate, make the familiar strange, and question the very nature of things. Media theorist Raiford Guins argues that the cultural appreciation of historical games is moving

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<sup>385</sup> Antonelli, ‘Paola Antonelli: Why I Brought Pac-Man to MoMA.’

<sup>386</sup> Antonelli actually states that she did wish to draw attention to gamecode, pointing to the inclusion of the art work *Distellamap* (2004) by Ben Fry and Casey Reas, a visualisation of the code and data found in a *Pac-Man* for the Atari 2600. Fry, however, clearly explains his intent for the work is not to analyse the software but to celebrate its elegance with an equally graceful portrait. True to Antonelli’s statement, the work merely draws attention to the underlying code of games rather than offering any examination of it. ‘Distellamap (Pac-Man)’ (*The Collection - MoMA*) <[http://www.moma.org/collection/object.php?object\\_id=110352](http://www.moma.org/collection/object.php?object_id=110352)>.

away from the era of simply chronicling game history through amassing objects and information, to a more critical and analytical approach to historical material.<sup>387</sup> Exhibitions, with their reflective and investigative approach, are part of this dialogue. The exhibition of videogames can be a useful process for addressing how a videogame's documentation shapes how it can be understood.



Figure 12: *The Hobbit*, Beam Software, 1982, ZX Spectrum Loading Screen

## 5.2 The Hobbit

### 5.2.1 Exhibiting the Hobbit

In 2006, when I exhibited *The Hobbit* (Figure 12) in ACMI's dedicated Games Lab, an emulated version of *The Hobbit* was displayed on a PC using a LCD screen. It was taken from the 1982 tape version for the ZX Spectrum, the platform for which it was originally developed. It was not the first release, *The Hobbit* 1.0, but the less buggy 1.2. Input to play the game was

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<sup>387</sup> Guins.21



through a contemporary keyboard. To assist people to play the game the gallery signage and “how-to-play” included an introduction to the parser and featured a useful vocabulary list. Also provided was part of a walkthrough whose instructions took you as far the Goblin’s Caves and told you how to escape with Thorin’s (or Gandalf’s) help from the Goblin’s Dungeon. Having introduced you to the logic of the gameplay and a sense of the game’s vocabulary, it then left you to it to get lost in the dark and find Gollum and the ring. Or the more likely scenario of getting lost in the dark, dying and be presented with an embarrassing statistic on how little of the game you had completed.

A number of things were learnt from exhibiting *The Hobbit*. Most significant was how challenging the audience found the work. Despite its simple interface, the nature of its challenges was unfamiliar. A text adventure such as *The Hobbit* requires a certain kind of literacy that is now uncommon in contemporary gameplay.<sup>388</sup> The hands-on gameplay offered a vital relationship with the work but it did not, however, reveal the work’s historical significance.

The original hardware proved challenging. Whilst audiences enjoyed looking at the original consoles as objects on display in the exhibition’s vitrines, they were not so comfortable using them (Figure 13).<sup>389</sup> Unless they were fans of the original microcomputers and had maintained an active interest in historical hardware, most people preferred to play the emulated versions on familiar hardware. Hedstrom et al found similar reactions in their study that presented subjects with the opportunity to play

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<sup>388</sup> Stuckey, ‘Exhibiting The Hobbit: A Tale of Memories and Microcomputers.’ Although having a resurgence now through the increasing popularity of gamebooks and Twine.

<sup>389</sup> Observational reflections of Games Lab and ACMI Visitor services staff, regrettably no real survey data established at the time.

the game *Chuckie's Egg* (A&F Software, 1983) either emulated on recent hardware or on the original BBC Micro. Their 'Chuckies Egg' test formed part of a study examining the software properties affected by the game's migration and emulation that users considered worth preserving compared to those valued by archivists. They found that test subjects preferred playing the emulated version than the micro. Audiences were less concerned with authenticity than access, including those who had played the games on the original formats but who valued the greater ease of play over the loss of the original look and feel.<sup>390</sup>



Figure 13: Hits of the 80's. Installation of display of microcomputers owned by 1980s Beam Software developers. Including original Famicom reverse engineered by Beam.

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<sup>390</sup> Hedstrom and others.

### 5.2.2 Game Aesthetics - What are we trying to save and show?

Playable games in the gallery do not necessarily communicate those qualities that make them historically significant. There are different ways to think about what is significant about a game. James Newman, in his amusing polemic, “Mario is missing”, recounts the quest of a hapless Game Studies student to find the canonical *Donkey Kong* amongst a plethora of ‘Donkey Kong’ games sprawled across numerous platforms and eras that can be identified on the internet. He makes clear, that the dilemma is not one of simply recognising the original arcade game in the crowd, but rather the more paradoxical question of *how do we define what Donkey Kong is?*<sup>391</sup> A dominant agenda of the PVWR was to look at the “significant properties” of interactive game software, “those characteristics and relationships that need to be preserved” to ensure that what is accessible is an ‘authentic enough’ experience “to be accepted as evidence of what they purport to record”.<sup>392</sup> As with Hedstrom et al.’s research, the ‘significant properties’ in question are those qualities of the software and its relationships to hardware and operating systems that can be lost or degraded through emulation.<sup>393</sup> But in asking what makes *Donkey Kong* ‘Donkey Kong’, preservationists are all too aware that the full answer will not be found in the precise analysis of code and its interdependencies.<sup>394</sup>

Archived game software is “just a ‘streak’ a trace of a game” argues Federico Giordana, in what he identifies as the Sisyphean task of attempting to fully document a game that, in his terminology, exists not as code but as a “relationship between the user/text/space and usage and

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<sup>391</sup> Newman, *Best Before: Videogames, Supersession and Obsolescence*.3-8

<sup>392</sup> McDonough and others.

<sup>393</sup> Ibid.

<sup>394</sup> The PVWR actually asks “what makes Mario, Mario?” I have altered it here to echo Newman’s rhetorical question.

social context". Rather than abandoning hope, he calls for a curatorial focus on the preservation of an "aesthetic identity" of a game.<sup>395</sup> Giordana's definition of aesthetic identity has parallels with the archivist's concept of a "work's identity". Archivists make a distinction between the "the state of the object" and the "identity of a work". The state of the object is its tangible elements subject to conservation efforts, whilst the identity of the work is located in how it is experienced and understood culturally.<sup>396</sup>

So what is important about *The Hobbit*? What qualities does it have that make it historically significant? *The Hobbit* represents the beginnings of the Australian game industry, including the important contribution of female designer, Veronika Megler, in an industry that remains male-dominated to this day. It was one of the first titles licensed from a book and an early example of bookware<sup>397</sup> (a game based on a literary work that was packaged with the game). Furthermore, it can't help but acquire some cultural resonance through being the first videogame to be officially associated with Tolkien's iconic work.

The game introduced technology innovations that should be acknowledged. These include: the sophisticated parser 'English' that allowed for the use of full sentences rather than simple two word "verb+noun" commands; the development of 'Animation', the simple AI which drove each individual character to make their own way through the real time world; and the 'Animtalk' system that allowed the player to converse directly with characters. But a casual survey of player comments from retro gamer websites, when cross-referenced with the critical entries

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<sup>395</sup> Giordano.

<sup>396</sup> MacDonough.

<sup>397</sup> *The Hobbit* appears to be the first example of bookware published for the Spectrum. It is the earliest of the 2,217 text adventures listed at <http://www.worldofspectrum.org/> classed as bookware. Montfort's identifies it as one of the earliest commercial works of bookware. Montfort.p171

on *The Hobbit* in published game canons, reveals that, for players, it was the possibilities created by the open-world that set the game apart from other text adventures and made it fascinating and memorable.<sup>398</sup>

Beam Software and Melbourne House Director Alfred Milgrom has perhaps had more reason to contemplate *The Hobbit*'s success than anyone else. He explains what he thinks defines the game:

I think the two things that were really strong about *The Hobbit*, that were unique. One was the internal physics ... even though it's a word game, ... everything had properties and size, strength, ability to be broken, where they could contain an object or could be contained... And so, as long as you obey the laws of the physics, you could do anything in there, whether we intended it to be done or not. That was one of the really nice things that I think was unique and even *Grand Theft Auto* I don't think has that same sort of internal consistency.

...And the other thing that I really liked was the, not just the language interface but the second removed language interface where we could tell other people what they should be doing. ...There wasn't artificial intelligence because they were deciding only whether they would do it or wouldn't do it...But you could tell Gandalf or someone to go and do something and if you were lucky or you chose the right command, they would go and they would go in the next room and they would go and have a find and come back...I don't think anyone else has done that.<sup>399</sup>

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<sup>398</sup> Tony Mott (ed), *1001 Videogames You Must Play before You Die* (Universe 2010); James Newman and Iain Simons, *100 Videogames* (British Film Institute 2007).

<sup>399</sup> Alfred Milgrom Interview. Helen Stuckey, 20 March 2013.

*The Hobbit's* dynamic world and the freedoms it offered players to interact with the gameworld are what make it such an important work historically. While this is embodied in the design, it is expressed by the played game. The challenge for the curator is how to communicate these qualities, to determine what kinds of documentation are available, and how to shape experiences in the gallery so they address these qualities.

## 5.3 Documenting the Hobbit

### 5.3.1 Contextual Material

The material legacy that surrounds the games of the 1980s includes box-art, manuals, magazines, and other items that form traditional archival resources.<sup>400</sup> The game cassette tapes and floppy discs are objects whose redundancy as digital storage tells one story, but they are also indexical of how games were retailed, acquired, owned, and shared. The micro-computers are themselves fascinating objects, a bizarre melange of different shapes and styles, from a time when engineers were still busy experimenting with form and function, before homogeneity settled in to personal computing.<sup>401</sup> These plastic boxes, bewildering to young audiences, are loaded with sentimental recall for others as the gateways to an exciting new world that became accessible from some small corner of their household. These objects are able to provide insight as to how games were experienced.<sup>402</sup> As part of a display they are capable of provoking interesting questions about how a game was consumed and of its place in the broader culture of home computing. Equally they can be banished from the gallery, as MoMA has chosen to do with the *Applied Design* exhibition

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<sup>400</sup> As previously noted, no design and development documentation has been located to date for the 1980s work of Beam Software.

<sup>401</sup> James Sumner, 'The Mighty Microcosm: Home Computers and User Identity in Britain, 1980-90' (2003) <<http://www.jbsumner.com/writing/2005-mighty-microcosm.pdf>>.

<sup>402</sup> Or visa-versa, depending on the ideas explored in the exhibition, where a game may merely be part of, or set dressing, in a display on themes of domestic consumption.

and the work can be interrogated through curatorial criteria established by the relationship to the other work on display. In the case of MoMA's *Applied Design*, this foregrounded their qualities as interaction design.<sup>403</sup>

The retro game site, World of Spectrum, has assembled a cornucopia of digitally scanned material from computer magazines of the 1980s including feature articles, advertisements, hacks and POKES<sup>404</sup> for *The Hobbit*. From these documents noteworthy stories can be extracted, e.g. Milgrom's revelation that it was actually the Tolkien Estate who suggested packaging Tolkien's book with the game.<sup>405</sup> In a time when videogames were an unknown, book sales offered a familiar foothold within this new publishing territory. By its request, the Tolkien Estate helped shape a new kind of gameware – bookware. Other stories inform us of the culture of gameplay, such as a letter documenting a player's offer to trade his notes, by mail, of his *Hobbit* journey in exchange for others in the hope of achieving a higher completion score than his 65%.<sup>406</sup> The request is a reminder of how important that mysterious statistic was. Players successfully finishing the game were intrigued by what they had missed, coveting that elusive 100%. The completionist desire offered a pleasure that is complementary to the narrative and problem-solving pleasures of *The Hobbit*, those of "ordering,

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<sup>403</sup> Reacting as a game fan, Raiford Guins' finds the stripping down of *Pac-Man* to just a screen and a controller in MoMA's exhibition problematic. His response rejects the possibility that the game could be considered in any context but its historical one. This reaction has echoes of the ludologist's passionate rejection of any other disciplines encroaching on games with theoretical lenses that were not specific to games. Videogames are designed objects that share qualities with many others, from style, narrative, visual aesthetics, sound and composition, and computer-based interaction. It is an ironic position proposed by Guins who has previously championed the need for contextualising videogames within the broader histories and theories of material studies and design history including industrial design, graphic design and engineering.

<sup>404</sup> POKES are cheats created by altering game memory files. Players, having loaded the games into their micro's memory, would modify the game's memory so as to alter the game to their advantage; for example, having unlimited lives or taking no damage.

<sup>405</sup> Kelly, 'Just Hobbiting Along.'

<sup>406</sup> "Letters" [1984] *Micro Adventurer* 4

<<http://www.worldofspectrum.org/showmag.cgi?mag=MicroAdventurer/Issue08/Pages/MicroAdventurer0800004.jpg>>

reordering and restoring [narrative] order”.<sup>407</sup> Different than a high score, this drive to complete all areas of a game, to get the full ‘story’, was to become a major feature of later platformers. *The Hobbit* is an early example of the psychological impact of this now familiar game design device.

### 5.3.2 The Played Game

In addition to these material records that are sought by both traditional and fan archives, are the more intangible oral histories of the game’s designers and other Beam staff. These interviews provide a vital record of the game’s design and development, and offer a means to communicate critical information on design decisions and to profile creators. Interviews formed a key part of both ACMI’s *Games Masters* and the Smithsonian’s *Art of Videogames* exhibitions of 2012. Interviews have the capacity to place a game’s design into a broader context of media culture, revealing the influences of films, television and other media forms. They also shift the understanding of the game’s aesthetics as deriving from given technical constraints to a narrative of individual creative achievements. *The Hobbit*’s extensive parser vocabulary, autonomous creatures, and use of graphics are each a small triumph of artistry within the technological possibilities of the era. The stories of game production are, however, not the only memories of value in understanding historical games. Retro gamer sites collect both comments and memories from visitors that document an understanding of the played game.<sup>408</sup> These records and comments contain information that cannot be conveyed by simply playing the games in the gallery. They offer

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<sup>407</sup> Karen Orr Vered, in analysing the pleasures of the 1997 CD Rom game *Myst*, addresses the impulse toward narrative closure in how players collated information within the game. She notes that players are constantly engaged in reordering information as they move through the game acquiring additional data and strive for a more satisfactory sense of narrative. She argues that the operational design of the game’s program, whilst allowing non-linear progression, supports the player to collate and configure the information they collect into a narrative, reordering and discarding information as required. Karen Orr Vered, ‘Plotting New Media Frontiers: *Myst* and Narrative Pleasures’ (1997) 13 *Visual Anthropology Review* 39.

<sup>408</sup> Stuckey, Swalwell and Ndalianis; Helen Stuckey and others, ‘Remembrance of Games Past: The Popular Memory Archive’, *The 9th Australasian Conference on Interactive Entertainment: Matters of Life and Death* (2013).



both documentation of the game itself and the culture that surrounded it. For example, in a comment posted on Lemon64.com on April 15, 2004, Ed Waddington remarks on the stresses of dealing with *The Hobbit's* infamously recalcitrant Non-Player Characters (NPCs), who had the ability to say “no” to actions essential for the player to complete the game. Waddington complains of Gandalf’s refusal to help him escape from the Goblin Dungeon and his struggle to get Bard to shoot the dragon.<sup>409</sup> These may seem like a bug to a player until they understand the nature of the game’s systems and the autonomy of its NPCs.

Other notable examples include the memories of Grandmaster recounted on the Eurogamer web site. He reminisces about gorging on Elrond’s free lunches until the game informed him “your own foul gluttony kills you”.<sup>410</sup> Providing further insight into the openness of the world, he exclaims how “amazing it was how you could stack up commands to the other characters. For example that, you could send Thorin into the goblins domain, get him to find Gollum’s ring, wear it, then come back to you and give it to you”.<sup>411</sup> Grandmaster’s comment provides an example of both player ingenuity and how the game’s sophisticated parser design worked with the autonomous NPCs.<sup>412</sup> In a comment on a YouTube video of *The Hobbit* on the Commodore 64, dazestorm complains he could never get past the king’s wine cellar, a reminder that, for many, these games were never

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<sup>409</sup> ‘The Hobbit (Disk Version) - Comments’ (*Lemon64*) <[http://www.lemon64.com/?game\\_id=1206](http://www.lemon64.com/?game_id=1206)>.

<sup>410</sup> Some of these quotes are used in ‘Exhibiting the Hobbit’ paper. Stuckey, ‘Exhibiting The Hobbit: A Tale of Memories and Microcomputers.’

<sup>411</sup> Comment posted in 2007 to “The Hobbit Review”, Eurogamer.net 2007. <http://www.eurogamer.net/articles/the-hobbit-review>. Accessed 12 December 2012

<sup>412</sup> The frustrating thing about *The Hobbit*, as a researcher, is that it is very difficult to go back and test the claims of players. Despite the many times I have tried to replicate Grandmaster’s action, I cannot get Thorin to be quite so helpful. This does not mean it is not possible as perhaps Grandmaster hit a ‘sweet spot’ of NPC actions and locations. Megler herself confirmed that players were able to achieve things that the designers had never considered. It could, however, be an exaggeration or conflation of events. No other Hobbit gamers, however, have pulled him up on it so we can assume the community of *Hobbit* players thinks it is plausible.

experienced as ‘complete’.<sup>413</sup> The range of player comments clearly addresses how frustrating and ‘buggy’ the experience of playing *The Hobbit* could be. This is an understanding that’s worth preserving, as many of the ‘bugs’ were created by the dynamic nature of Megler’s game engine. The open nature of the game system made it very difficult to debug, but many of the so-called ‘bugs’ were just the unforeseen events the game system created, some of which hindered, whilst others helped, the player.

Not all remembrances of the game are about the game itself. The blogger Winterdrake recalls the importance of *The Hobbit* to him as a nine-year-old boy in Portugal. He explains how playing the game changed his life by encouraging him to read books, learn English and take on difficult challenges. Comments on Winterdrake’s post by French and Portuguese gamers reveal that they too used the game as a tool for learning English.<sup>414</sup> Collecting and exhibiting documentation of player experiences can help communicate to contemporary audiences some of the ways players experienced *The Hobbit*.<sup>415</sup> The “vernacular” of retro gaming, argues Jason Wilson, can provide a way to discover the ‘spectacular and astonishing’ moment when games were new.<sup>416</sup> These player stories contain the kind of narratives that engage audiences, helping them understand the original players’ experience with the designed object.

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<sup>413</sup> “i remember this well, i never could get past the kings wine cellar, i get in the wine barrel and the wine barrel would be released into the portcullis waterfall, the barrel crashing far below to the rocks below and instant death” Comment posted in 2010 on You Tube Video ‘The Hobbit adventure game for the C64’, 2008 <http://www.youtube.com/watch?v=SZsyv5aKw4U>. Accessed 10 December 2012.

<sup>414</sup> Winterdrake, ‘The Hobbit (ZX Spectrum, 1982) and How a Kid Became a Geek’ (*Winterdrake*, 2011) <<http://winterdrake.com/the-hobbit-zx-spectrum-1982/>> accessed 17 April 2013.

<sup>415</sup> Stuckey, ‘Exhibiting The Hobbit: A Tale of Memories and Microcomputers.’

<sup>416</sup> Wilson, ‘Gameplay and the Aesthetics of Intimacy.’ 26

### 5.3.3 Player Artefacts

To understand games as played, Newman has argued that the player-produced walkthrough gives rise to some of the most insightful documentation and investigative analysis available.<sup>417</sup> In the early 1980s, before the internet made the sharing of walkthroughs a commonplace activity, *Hobbit* player David Elkan wrote a comprehensive gameplay guide for the game.<sup>418</sup> Elkan sent his personal guide to solving *The Hobbit* to the offices of Melbourne House/Beam Software who published it as the book *A Guide to playing The Hobbit* (1984) (Figure 14). No doubt it became the salvation of many players.<sup>419</sup>

The guide, however, is not a straightforward walkthrough. This would not have been possible as the gameworld was different with every playthrough. The book offers a three tiered level of help, each providing slightly more detail. The third level of hints is written in code so as to not accidentally reveal any spoilers. The layout of the final section of the book is itself hyper-textual, working like a choose-your-own-adventure book. *A Guide to playing The Hobbit* offers a semantic map of the game, an explanation to the principles of the parser, it links the game's puzzles back to Tolkien's story, and even includes black and white images of the original game graphics. Elkan provides a rich selection of hints that could only have been figured out by meticulous replaying of the game and testing multiple possibilities. Published in 1984, the book is an early example of a player-

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<sup>417</sup> Newman, '(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay'; Newman, *Best Before: Videogames, Supersession and Obsolescence*.

<sup>418</sup> David Elkan, *A Guide to Playing the Hobbit* (Melbourne House 1984).

<sup>419</sup> Milgrom recounts that they received a lot of correspondence regarding *The Hobbit*, mostly requesting help with the game. (Milgrom, Alfred, Interview, Helen Stuckey 20 March 2013) Barnett recalls taking a call from an irate mother complaining that her son could not get any "a" words to work in the game. He politely asked where they had purchased the game and heard the son in the background begging his mother to get off the phone. Barnett had set up the tape version of the Commodore 64 game so that tape buffer held executable code, if you had a pirated copy of the game the "a" database would be missing. (Gregg Barnett, Interview 29 December 2012, Helen Stuckey)

generated artefact designed for sharing with other players. It is a remarkable record of the game and a careful reading of it provides a very comprehensive understanding of how the game plays.

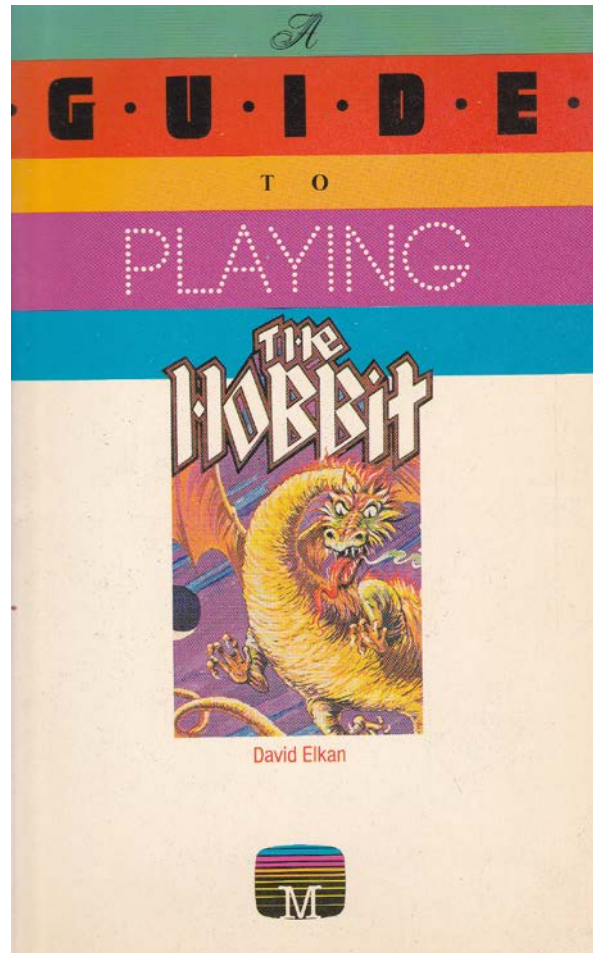


Figure 14: Elkan, David (1984) *A Guide to Playing the Hobbit*, Melbourne House

In contrast, the YouTube video speedrun ‘ZX Spectrum *The Hobbit* completed in 7 minutes!’ by Jammajup01, offers a reading of the game against its adventure narrative. It’s a different kind of walk-through, documenting one player’s scheme to beat the game by playing the system and not the story.<sup>420</sup> In the play-through, Jammajup01 avoids the Goblin’s Caves. In the Caves the links between areas are generated using ‘special routines’ that result in the area’s links being randomised for each new play-

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<sup>420</sup> Stuckey, ‘Exhibiting *The Hobbit*: A Tale of Memories and Microcomputers.’

through. Megler explains that she designed the location database so that each direction or exit could have a 'special routine' associated with it if desired. "...if a character (player or non-player,) went in that direction, any special routine associated with that direction would be applied. In this way, for example, a door could be associated with certain physics (e.g., a character couldn't go through if it was carrying more than a certain number or size of goods). Such a routine could also have deposited a character in some randomly chosen 'next' location".<sup>421</sup> In the Goblin's Caves these 'special routines' randomise the links between a set of locations, thus making it impossible to map the space for navigation. To ensure a speedy pathway Jammajup01 simply avoids this area. By avoiding the Goblin's Caves, the player (as Bilbo)<sup>422</sup> does not meet Gollum, play the riddle game and get the ring. This makes the speedrun a very curious 'telling' of Tolkien's *Hobbit*. The 'run', however, is revealing regarding how the gameworld operates, offering a way to discuss both the ingenuity of the world design and that of players.<sup>423</sup>

Game capture on video and player created walkthroughs (text and video) have been identified as desirable archival materials that document a game in a form of (relatively) stable media for preservation.<sup>424</sup> Game capture can offer a level of fidelity to the original played experience that

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<sup>421</sup> Veronika Megler, Personal Communication, 12 November 2013.

<sup>422</sup> Clara Fernández-Vara notes that playing as specific characters, such as Bilbo, became more common in Adventure games with the advent of graphics, citing *The Hobbit* as an early example. Clara Fernández-Vara, 'Shaping Player Experience in Adventure Games: History of the Adventure Game Interface' in Leino Olli, Hanna Wirman and Amyris Fernandez (eds), *Extending Experiences: Structure, Analysis and Design of Computer Game Player Experience* (Lapland University Press 2008).

<sup>423</sup> Stuckey, 'Exhibiting The Hobbit: A Tale of Memories and Microcomputers.'

<sup>424</sup> Newman, '(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay'; Newman, *Best Before: Videogames, Supersession and Obsolescence*; Henry Lowood, 'Game Capture: The Machinima Archive and the History of Digital Games By': (2008) Spring Mediascape: UCLA's Journal of Cinema and Media Studies <[http://www.tft.ucla.edu/mediascape/Spring08\\_GameCapture.pdf](http://www.tft.ucla.edu/mediascape/Spring08_GameCapture.pdf)>; Lowood, 'Video Capture: Machinima, Documentation, and the History of Virtual Worlds.'



### 5.3.4 Wilderlands

*Wilderlands* (2012) is a player-made artefact for *The Hobbit* that has the remarkable capacity to simultaneously reveal both the game's behaviour as a work of design and the performance of the player within that system. *Wilderlands* was created by a player fascinated by how the open world worked. It reveals what is really going on in the gameworld in real time. In *Wilderlands*, the original game code for the ZX Spectrum runs in an emulator and, as the game is played, *Wilderlands*' 'user-friendly' interface shows the internal state of the machine. Windows surrounding the game screen display the state of objects and creatures, a map with the current positions of animals and a log of what all the other NPCs and creatures are doing (Figure16).

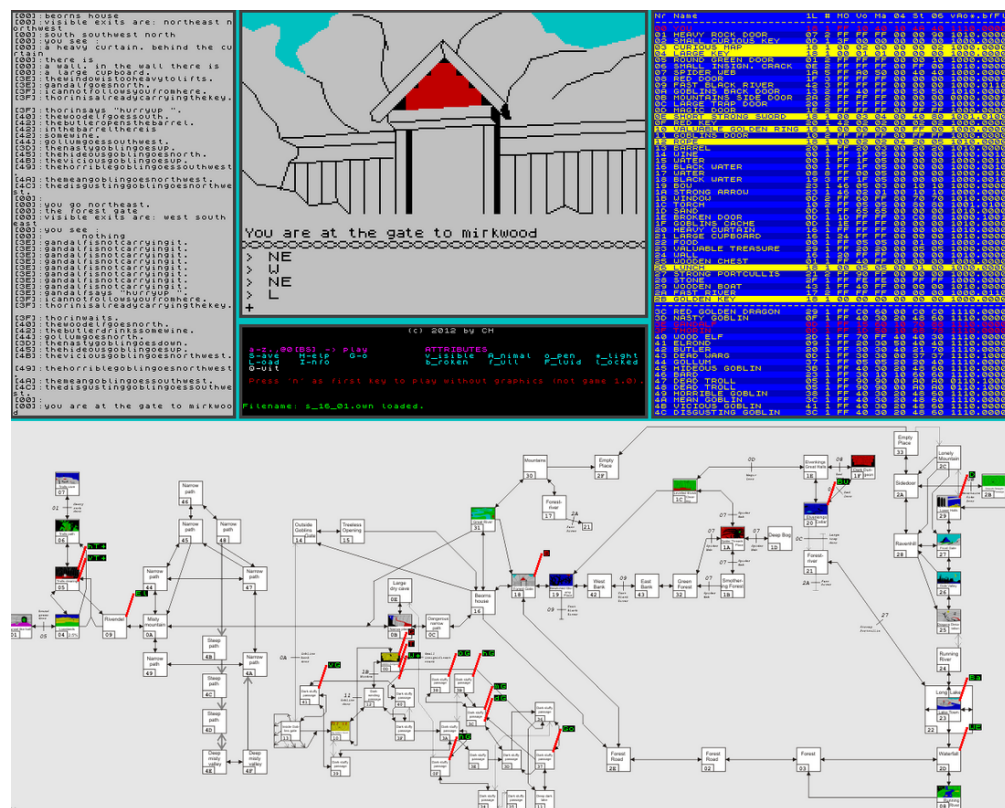


Figure 16: Wilderlands, 2012

The *Wilderlands* software passively observes the memory of the emulated computer to see what is happening in the game. Coupled with knowledge of the data structures used in the original source code, such as what ID

numbers represent, it produces a record of events in a format that can be understood by the user.<sup>426</sup> As the player has their turn it is rendered visible, as are all the 'turns' taken by the non-player characters and the changes in the world.

*Wilderlands* creator (CH) explains how his motivation for building the interface dates back to the 1980s, when he was playing *The Hobbit* and encountered the cryptic message "this room is too full for you to enter"<sup>427</sup>. Anxious that he had missed out on an important part of the game, he started looking into the source code, a difficult task on the ZX Spectrum.<sup>428</sup> Many years later, emulation has made it possible for CH to examine the game in action to reveal the hidden relationships between the user and the system. For the curator, *Wilderlands* literally offers the opportunity to make visible the invisible, enabling a deeper level of engagement with the artefact for the museum visitor.<sup>429</sup> *Wilderlands* is like a beautifully crafted museum display that exposes the working parts, a little like the glass panel showing the wonders of a clockwork engine. Didactics may be needed to make sense of what the audience can see – but they can see it – the cybernetic loop, the player input and the game's response; the algorithms in action.

### 5.3.5 Ports

The success of *The Hobbit* on the ZX Spectrum (Figure 17) encouraged Beam to port the game to as many platforms as it could.<sup>430</sup> First among them was Beam's other development platform of choice, the Commodore

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<sup>426</sup> Many thanks to Craig Harrington for his technical explanation of *Wilderlands* in action.

<sup>427</sup> The message was a product of one of Megler's 'special routines'.

<sup>428</sup> CH, 'Wilderland: A Hobbit Environment' (2012) <<http://members.aon.at/~ehesch1/wl/wl.htm>> accessed 18 August 2013.

<sup>429</sup> Stuckey, 'Exhibiting *The Hobbit*: A Tale of Memories and Microcomputers.'

<sup>430</sup> Milgrom, Alfred, Interview, Helen Stuckey. 20 March 2013.



64 (Figure 18). According to Gregg Barnett, Beam's Commodore expert, the port was simple and fast, as Mitchell had done an excellent job in documenting all the routines. Everything appeared very similar except for one crucial difference – the graphics ran very slowly on the Commodore. Barnett explains how the Commodore 64 did not really support graphics created for the Spectrum. "The Commodore is not about raw power for graphics, it's about using fancy tricks. So this was all old school, [draw a line fill it in] so the [*Hobbit's*] Commodore graphics were quite slow and you could spend all day watching the green door fill..."<sup>431</sup> A tape version of *The Hobbit* was also ported to the Oric, a system renowned for attribute clash where the graphics took on a more lurid hue. The Amstrad CPC sported a whole new palette of colours. The BBC Micro did not have enough memory for the graphics to be included. Other tape ports included one for a clone of the Tandy Colour Computer (CoCo) and the Dragon32.

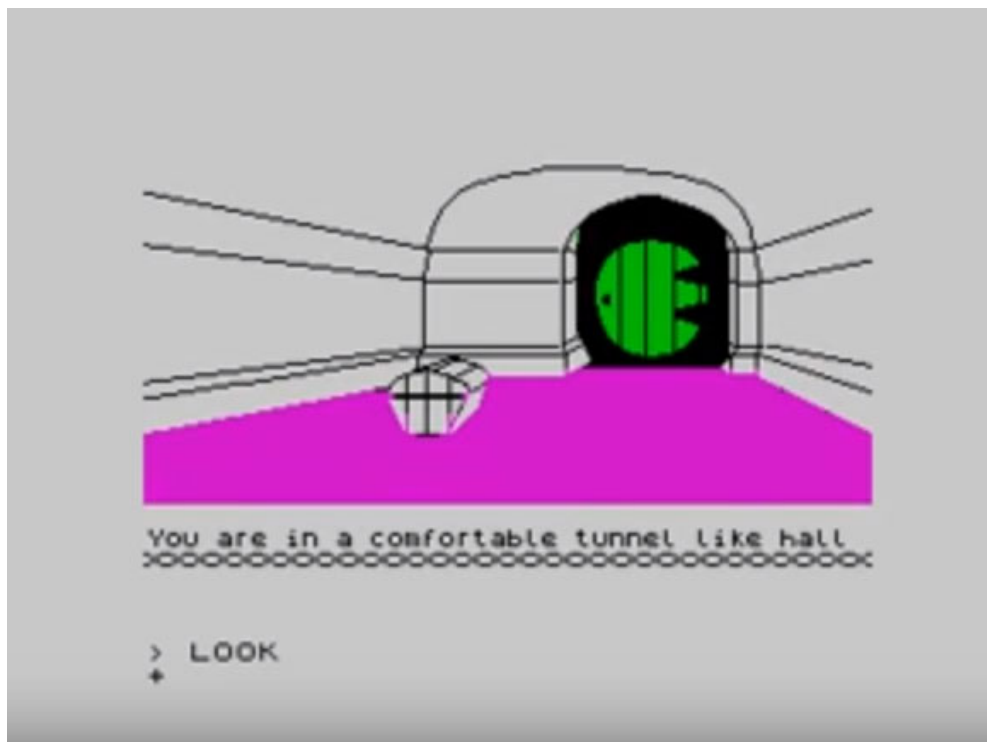


Figure 17: ZX Spectrum. Tape

<sup>431</sup> Gregg Barnett, Interview 29 December 2012, Helen Stuckey.

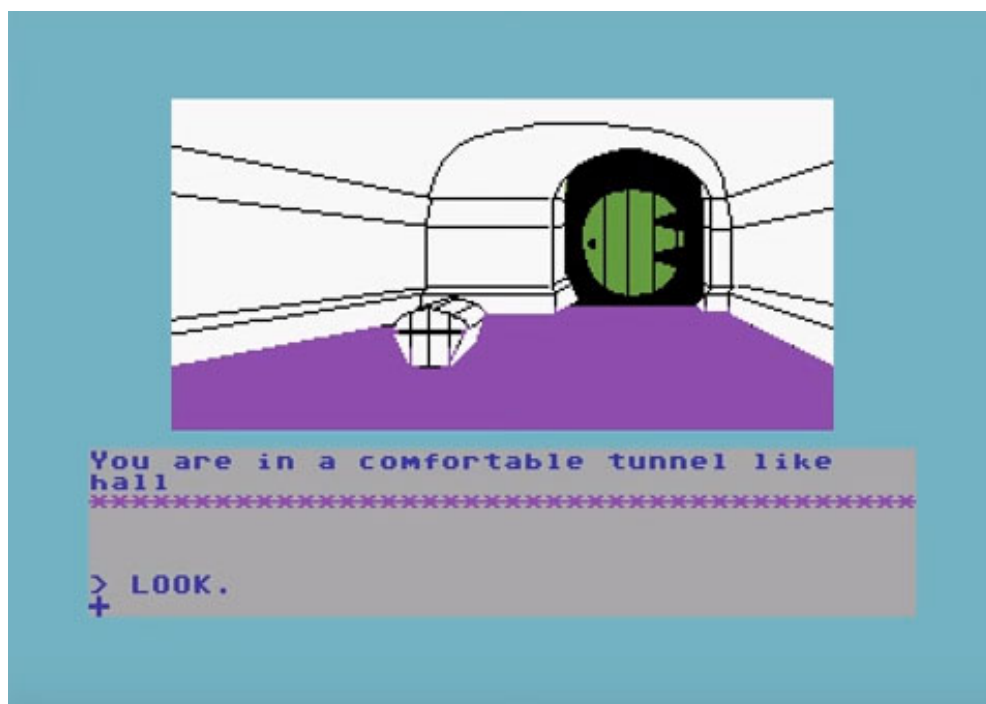


Figure 18: Commodore 64, Tape



Figure 19: Commodore 64, Disk, Image sourced from Moby Games

Images 17 & 18 are taken from emulation and are offered only as reference as emulation may cause changes to scaling, pixel ratio, aspect ratio, colour generation, other issues include line glitching and loss of CRT screen bleed, scanline and curvature. These are all facts that highlight the importance of documenting games on original hardware while we still can.



Figure 20: Apple II, Disc. Image sourced from Moby Games

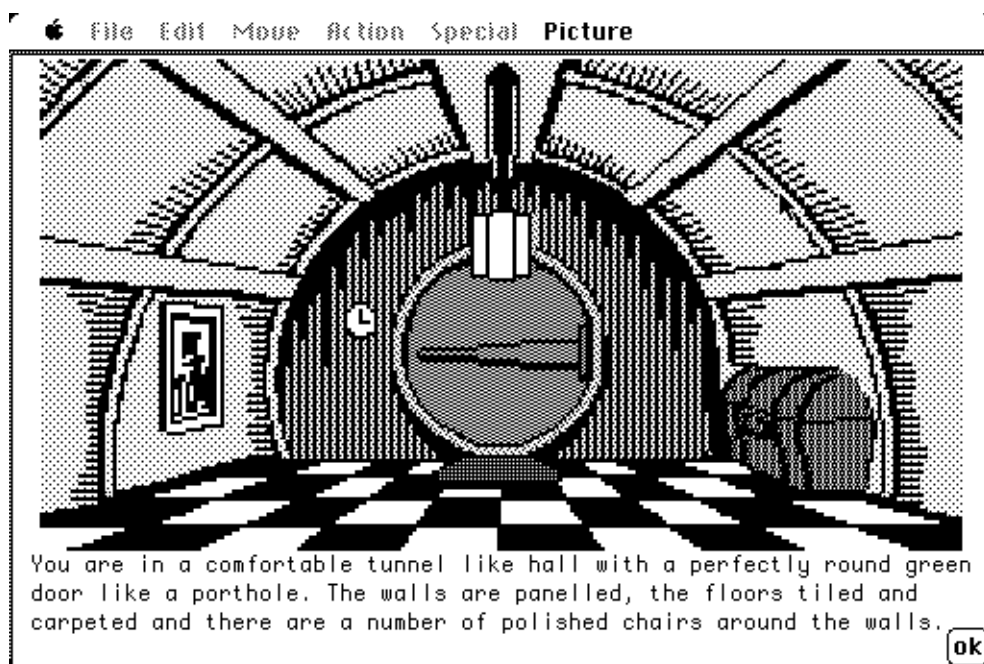


Figure 21: Macintosh, disc. Image sourced from Moby Games.

In 1985 Beam reworked *The Hobbit* to take advantage of the added memory of the Commodore 64's disk drive and added many more images throughout the game. By this time Beam employed dedicated artists Russel Comte and Greg Holland, who created full bitmap graphics using the fancy

tricks of the Commodore 64's graphics chip (Figure 19). The game was further enriched by the addition of music composed by Beam's in-house sound designer Neil Brennan. New routines were added to drag it efficiently off the disk. The new look *Hobbit* revived interest in the game. It was released for a number of microcomputers with disk drives including the MSX, BBC Micro, Apple II and Macintosh, and for the DOS operating system. The individual requirements of each micro with their distinct graphic and audio capacities altered the game's appearance across the differing platforms (Figure 20 & Figure 21).<sup>432</sup>

All of these games are *The Hobbit* despite the fact that the game loaded slowly on some platforms, did not have music on all, has more graphics on some, black and white graphics on another, and no graphics at all on one. It is the curator's job to make decisions about what to collect and exhibit, rather than indulge the encyclopaedic notion of collecting all possible associative material. Determining which version(s) to collect is important, as it will determine how the game is understood in the future. In developing an exhibition on the story of Beam, the 1982 release of *The Hobbit* for the Sinclair Spectrum, which is most intimately linked to Megler and Mitchell's creative processes, is an obvious choice. But what if museums identify the game solely with its initial release on the Spectrum? What does it mean for the 1985 Commodore 64 version which features the finer graphics created by Beam's new team of artists and the celebrated sound design of Neil Brennan – in nearly all ways a superior version. What understanding do we lose about the work of Philip Mitchell, who spent several years working on all these ports, if we collect only one *Hobbit* to stand for them all? What is lost in the act of identifying *The Hobbit* as an

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<sup>432</sup> Ibid.

ideal amalgam of all its differing iterations or, conversely, in selecting a single or ‘original’ version to stand for all versions?<sup>433</sup>

It is worth considering what kinds of stories these multiple versions of *The Hobbit* can help to tell. Images of *The Hobbit* on different platforms can be used to illustrate a number of important issues. Firstly they reveal that a game is not just code but also the interaction with the specific hardware. Whilst this may seem self-evident, an increasing dependence on emulation homogenises the experiences of playing historical games, erasing the impact of specific platforms for new audiences. They will not have access to working hardware to feel the contrast between the Spectrum’s elegant rubber keyboard and the Commodore 64’s blocky keys. Without these experiences, whose very physicality and materiality foster an expectation of difference, displaying the varying appearances of the game helps illustrate the role of hardware.<sup>434</sup>

It can be difficult to showcase game mechanics in the gallery. Whilst hands-on gameplay requires engagement with the mechanics, it may not provoke reflection on them. In the exhibition environment, the many versions of *The Hobbit*, with their often strikingly different appearances and audio environments, can highlight the game mechanics as distinct from the game’s look and feel. In the hands of the curator, these different versions can become a means to pose the question for audiences: What are a game’s essential aesthetic qualities if the same game looks and sounds so very different on different platforms? What makes the Hobbit, *The Hobbit*?<sup>435</sup> The potential of ports to provide new insights through a comparative analysis is

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<sup>433</sup> Ibid.

<sup>434</sup> Ibid.

<sup>435</sup> Ibid.

argued by Clara Fernandez-Vara. Rather than dismissing ports as of less value than the game on its original platform, Fernandez-Vara explains, “ports can help us understand the affordances of different platforms, the defining features of a particular game, and what “fidelity” might mean in digital translations”.<sup>436</sup>

It is important to record that *The Hobbit* does not have a ‘single’ history. As an early hit for the ZX Spectrum, it is closely linked to the influential platform that galvanised home computing in the United Kingdom.<sup>437</sup> In the United States, however, it is best known for the beautiful Addison-Wesley boxed releases for the Apple II, IBM PC and Commodore 64 disc version. These featured a lengthy manual richly illustrated with Tolkien’s drawings and foldout maps. Also in the box was a copy of the book by the American publishers Ballantine’s, an unfamiliar edition for Antipodeans and Europeans. As illustrated by Winterdrake’s memories, the game was not only distributed in English-speaking countries but also many places in Europe, finding particular popularity in Spain and Germany where it was played as a language learning tool as much as an adventure. It even made its way to eastern-bloc countries. In Australia, it is often cited as a seminal game, but virtually no one knew it was locally made.<sup>438</sup>

Despite an earlier claim that this chapter was not going to address the technology of emulation, it would be remiss not to draw attention to the playable versions of *The Hobbit* that exist online. The World of Spectrum (WOS) offers not just downloads of tape files, but six versions of the game

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<sup>436</sup> Clara Fernández-Vara and Nick Montfort, ‘Videogame Editions for Play and Study’ (2013).6.

<sup>437</sup> Melbourne House had already cemented this relationship with Sinclair through the Horace Games.

<sup>438</sup> Steve Fawkner cites it as one of the first games he remembers playing. Matthew Hall also recounts playing *The Hobbit*.

playable in the browser.<sup>439</sup> These are versions of *The Hobbit* 1.0 and 1.2 as both TZX and TAP images.<sup>440</sup> As part of its Historic Software Collection, the Internet Archive has an online version of *The Hobbit* 1.0 hosted in the JSMESS (JavaScript MESS) player that runs happily in most browsers. Where the WOS emulator works with the conventions of a modern keyboard, the Internet Archive maps the original ZX Spectrum to a modern keyboard so the player needs to familiarise themselves with its workings. There is a handy graphical reminder of the Spectrum keyboard to assist the player. Playable in the browser, both these instances offer easy access to the historical work. They do not require any sophisticated knowledge of emulators and file types, or any risky downloads. They demonstrate the advantages of allowing audiences to access work in a home computing environment, which is also more conducive than the gallery to supporting extended play and experimentation.<sup>441</sup>

## 5.4 Discussion

Playable games are a desirable feature in the gallery, offering an important hands-on interaction with works. In its 2006 ACMI exhibition, the playable version of *The Hobbit* did not readily communicate to audiences what was significant about the game's design and the potential of its gameplay. The unfamiliar protocols and gameplay of the vintage game's media presented a challenge for audiences. Curatorial choices, such as providing a prescriptive walkthrough that stopped at the point where navigating the game was at its most puzzling, may have worked to hide the dynamism of the gameworld from audiences. By failing to encourage

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<sup>439</sup> The World of Spectrum play in the browser games are one of the many features that are yet to be restored after the death of its server in March 2015. This is discussed in Chapter 6.

<sup>440</sup> TAP is a conventional Tape file image; WOS have created the TZX file format. It is designed to replicate the original tape content exactly including the custom loaders designed as copy protection. The group's major project is the conversion of all commercially written software for the Spectrum recorded on tape to TZX.

<sup>441</sup> Not discussed here are the legal issues of museums exhibiting historical games in the browser.

audiences to experiment in the world and suggesting that the world was simply 'solvable' by rote, it presented a false expectation of the game. In hindsight, it would have been preferable to continue the walk-through into the Goblin's Caves where the game randomises links between the spaces, to illustrate that a prescriptive walkthrough would not allow you to solve the game. This strategy, combined with documentation on player's recollections of their experiences of the world, would be more likely to encourage exploration from audiences. I would argue that the best exhibitions are not didactic, but invite the audience to look for the relationships and patterns in the display to construct meanings, develop and test their theories, and reflect on aesthetic connections.

MoMA, in accessioning *EVE Online* (2003 – ongoing) into their Architecture and Design collection, provides one of the more sophisticated examples of the challenges of collection and display of videogames, representing them as played. Its scale dwarves *The Hobbit; EVE Online*, by Icelandic company CCP, is a player-driven massive multiplayer online game whose gameplay exemplifies the freedom of an open world. One of the first fourteen games collected by MoMA in 2012, it featured in the exhibition *Applied Design* (2013).

MoMA has defined criteria for the collection of objects for its Architecture and Design collection. These are: the relationship between form and function; the development process of the work; the object's innovativeness; and the object's necessity. These qualities determine the overall cultural impact of the object. These conditions apply whether the objects are material or immaterial.<sup>442</sup> For the accession of *EVE Online*,

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<sup>442</sup> MacDonough.



MoMA's approach to *EVE Online* was not to see it as software, but as a sprawling ecology or living system.

#### 5.4.1 Curatorial Agenda

MoMA's curatorial agenda for its videogames collection focuses on four main traits: behaviour (both as rule sets and by players); aesthetics (audio, visual mechanical, algorithmic etc.); space (from recreating to undermining Cartesian perspective and building new worlds); and time (internal, compressed, linear ...or even wasted).<sup>443</sup> The goal for the display of *EVE Online* was for people to understand the "deep complexity and depth of their player driven universe", how it impacts on the lives of real people, and to capture some of the gameworld's beauty. To communicate these ideas, CCP produced a video documenting twenty-four hours of *EVE Online* for MoMA. On a nominated date, *EVE* players were asked to record their activity and send their game-capture to CCP, who edited it in to a concise eight minute 'narrative'. Accompanying the game capture, CCP translated twenty-four hours of game data from their servers<sup>444</sup> into a legible format using infographics. Plotted to a map of *EVE Online*'s New Eden universe, the data is used to illustrate activity in the game. Torfi Frans Olafsson, Creative Director of CCP's IP Development Division, explains:

You can see mail messages shoot between star systems, how different timezones light up distinct regions as the players in the US log in, as opposed to the players in Russia or Western Europe. Playing back all the ship and escape capsule explosions over 24 hours mapped onto the stars in 20 seconds became quite the light show. The player videos are then edited in,

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<sup>443</sup> Antonelli, 'Video Games: 14 in the Collection for Starters.'

<sup>444</sup> Taking 1.2 terabytes of data from the SQL and Hadoop servers. SQL or "Structure Query Language" connotes the database servers for the world, whilst the Hadoop server processes the multiple logs and data sets from *EVE Online*.

showing the in-game behaviour of the data you are seeing in the infographic. It is impossible to tell the whole story of EVE, the intrigue, the deep relationships built, the mystery and passion. We decided to focus on the universe itself and the complex interactions the players have with the world, the scale and their effort. We use two synchronized full HD monitors for the final display, often with gameplay on one side playing and infographics on the other one. We are pretty happy with the final result.<sup>445</sup>

What MoMA has captured is merely a representative slice of the life of *EVE Online*, but one that is rich in detail and information about activity within the world. "EVE is a living breathing world", Olafsson explains "which has shed its skin and been re-written, had its art assets and rendering engine replaced, and overall renewed in one way or another twice a year for a decade now".<sup>446</sup>

CCP also provided MoMA with a version of the game's software. The developers created a stand-alone *EVE* universe for MoMA, a custom-built version of the game's hardware and software for both the game's server and client. These have been collected as an example of the game code and are not placed on display.<sup>447</sup> The exhibition of this software alone would provide an empty world. The software has been preserved as a form of documentation, understood to be of interest in the future for researchers wishing to learn more about the work, rather than as the work itself.

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<sup>445</sup> CCP\_manifest, "Museum of Modern Art Interview with CCP t0rfirans at Polygon" (*EVE online Forum @ Reddit.com*, 2013)  
<[http://www.reddit.com/r/Eve/comments/19ppcy/museum\\_of\\_modern\\_art\\_interview\\_with\\_ccp/](http://www.reddit.com/r/Eve/comments/19ppcy/museum_of_modern_art_interview_with_ccp/)> accessed June 07, 2013.

<sup>446</sup> Ibid.

<sup>447</sup> Ibid. MMO's use a client-server model.

MoMA's approach to *EVE Online* highlights the importance of exhibition and access in thinking about collecting videogames. The focus on player's interactions with the world, and with each other, corresponds to the criteria that MoMA has set itself for curating games as interaction design. The *EVE Online* documentation is focused on communicating some of the qualities that MoMA identifies as significant. These include: The vast universe of New Eden's persistent world; real-time play mapped on game-time; and rule sets designed to support emergent player behaviour. The game software, isolated on its time-capsule server and sole client, has merely a supporting role in MoMA's collection. It can't explain and certainly cannot communicate what the work is about. It is a most arcane relic, a resource for a skilled forensic researcher who could untangle the promises of its code. Whilst *EVE Online's* complexity dwarves *The Hobbit*, the need to create an exhibit-able *EVE* display, provides a clear example of the distinction between preserving the game code and preserving understandings of the game.

A type of collaboration between the player community and developers produces the *EVE Online* display. It provides a demonstration of both the designed game and the played game, demonstrating the gameworld's complexity and visual beauty in addition to documenting a sense of the game's behaviour in response to the performance of players within its systems. MoMA's *Eve Online* provides an example of how, unlike an object-based work that can be simply accessioned into a collection, videogames need to be 'assembled'.

How a work is acquired and documented will, to a large extent, determine how current and future generations understand it. Thinking about curation provokes reflection about the best material to collect and to exhibit, and attention to how this material might be accessed in the future. I

have suggested that museums might need to think differently about the work they collect. George F. MacDonald and Stephen Alsford argue that the business of the Museum is evolving to become less about artefacts and more about information.<sup>448</sup> Collections have, in the past, focused on the acquisition of objects. Collection information was predominantly descriptive of the materiality of the work and it was through exhibition curation that larger narratives were attached to collection objects. In the future, the collection of complex interactive digital objects, such as videogames, will require an approach to the acquisition of works and its preservation that is focused on documenting and communicating the experiences they offered. This concept is demonstrated by the *Eve Online's* accession into the MoMA collection, how capturing an understanding of the game as experience was created through the developers working with information provided by the game's generous player community to produce a display that addresses the game as a living system. An old game, released over thirty years ago, *The Hobbit* has no known examples of source code and no surviving design documentation. Representations of *The Hobbit's* aesthetic identity, its identity as a work, must be 'assembled' through the act of curation.

#### 5.4.2 Exhibiting Fragments

The exhibition curator is engaged with the selection of items that will resonate with each other to reflect upon different issues, narratives and aesthetics. The multiple versions of *The Hobbit*, shaped by their different hardware dependencies, present an opportunity to invite audiences to reflect on what defines *The Hobbit* as both game and design in the era of the microcomputer. They tell a story of design when developers had to deal

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<sup>448</sup> George F MacDonald and Stephen Alsford, 'The Museum as Information Utility' in Ross Parry (ed), *Museums in a Digital Age* (Routledge 2010).

with a multitude of platforms and operating systems. More than just drawing attention to the technical constraints and technological contexts of the era, they help contextualise and reveal the creative achievements of the development teams.<sup>449</sup> The many platforms also governed the social conditions of play in the microcomputer era, with the emergence of groups of users who identified loyally with their platforms and built communities around them.

Videogames support complex relationships with players and what players do with the object of design can be as significant as the work of the designers. Collecting player memories and artefacts provides an understanding of the game that is far richer and more nuanced than just presenting the game as a playable object. Player recollections collected from online retro gamer sites offer a wealth of detail on players' experiments and experiences within *The Hobbit's* open world. A careful selection of even a small number of these memories can clearly communicate a sense of the potential of the game's open world to exhibition audiences far more effectively than just the opportunity to play the game. The inclusion of the voices of players can enrich the historical record of the work. These accounts offer insight and understanding, but also can act as tutorials guiding new audiences to interact with the game in a manner that offers them a more revelatory experience of the work, allowing them to test and tease out their own experiences. Player memories are also able to document the social and cultural significance of the game. It is often only through player recollections that we can learn about the further impact of the game or the social circumstances of playing it.

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<sup>449</sup> Wilson, 'Gameplay and the Aesthetics of Intimacy.'

### 5.4.3 Online Access

Many of the resources that document *The Hobbit* are digital objects, including the game itself. Despite its historic dependencies on selected platforms, *The Hobbit* can now be played online in platform-agnostic browsers. As a text adventure, it can be emulated and hosted online without significant compromises to its functionality. A host of supporting contextual historic materials can also be displayed online, as is illustrated through World of Spectrum's *Hobbit* entry. Access and display online enables the differing fragments that document *The Hobbit* to co-exist in a form that can be browsed and re-assembled. There is no singular way to exhibit *The Hobbit*. It can be examined from many angles and within various larger contexts. These include: an exploration of text adventures; as part of the cultural legacy of Tolkien; a profile on Sinclair; the history of microcomputers; women in games; graphics in games; the development of world simulations, to list just a few. In each of these potential exhibitions, the relationships that are created between the other works on display would reveal differing aspects of *The Hobbit*, for it is in the dynamic discursive space of the exhibition that meanings are revealed and new insights begin to crystallise. These ideas are explored further in Chapter 7's discussion of the Popular Memory Archive, which examines how, with its web of networks and database functionality, it can be conceived as a kind of restless archive, allowing new connections to be made between the assembled fragments.

## 5.5 In summary

I have argued that the digital object, *The Hobbit*, is not reducible to its code and, in fact, defining the work as 'an object' is a problematic way to think about it. For their exhibition and collection, historical games such as *The Hobbit* need to be assembled through a series of fragments and a playable version of the software can be just be one of these fragments. The

understanding of what is the work is itself complex as a game may exist in many different version and iterations. The value of each of these is culturally constructed, and there is no essential or ideal version. What makes a game historically significant cannot simply be defined by its design, but is also located in its players' experiences. Player experience is multi-layered and cumulative. This is hard to document and hard to exhibit. Player memories and artefacts can be valuable for both exhibition and collection in communicating those qualities that make a game both culturally significant and to interrogate its design. Player objects, such as the published *Hobbit* walkthrough, can offer the best durable record of the work. Player objects can also offer dramatic insights; for example, *Wilderlands* provides a means for a forensic analysis of the relation of the game system to the players' actions.

I have concluded with a reflection on how much exhibition content exists in a digital format and may not need to sit on plinths or in cabinets, but could be displayed and shared online. In the next chapter I examine the practices of two retro gamer sites that create and share their collections online, examining how they document and display historic games, and how they engage with community to build their resources.





## Chapter 6

# Retro gaming Community Sites and the Museum

## 6.1 Intro

In the last chapter I addressed the question of documenting a game, reflecting on the demands of exhibition curation with its focus on access and display. I proposed a number of both conventional and unconventional resources for the display of *The Hobbit*. I argued the importance of documenting the relationship of the designed games and the played game and proposed a more discursive and fragmented approach. Many of the resources examined were drawn from the activities of the retro gaming community who, through their own initiatives, have been pioneering in the online curation and overall preservation of videogames.

This chapter considers the contribution retro gamer communities can make to the exhibition and collection of 1980s microcomputer games.<sup>450</sup> The chapter reports on the practices and personnel of two established retro gamer community sites dedicated to documenting and preserving games. These are the World of Spectrum (<http://www.worldofspectrum.org/>), dedicated to the Sinclair ZX Spectrum, and Lemon64 (<http://www.lemon64.com/>), dedicated to the Commodore 64. I examine the ways in which these sites harness the expertise of the retro gamer community to gather information. I consider how they address the technical and media historical issues for remembering and preserving games, and reflect on what museums could learn from their practices and methods. I draw conclusions regarding the potential for more cooperation between amateur experts and institutions.

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<sup>450</sup> This chapter is based on the co-authored published paper for which I was the principal author. Helen Stuckey and Melanie Swalwell, 'Retro-Computing Community Sites and the Museum' in Mario C Angelides and Harry Agius (eds), *The Handbook of Digital Games* (IEEE/Wiley 2014).

Research for this chapter included structured email interviews conducted in 2012 with informants who held leadership roles on the sites. These are Martijn van der Heide at World of Spectrum and 'Mayhem' at Lemon64 and Gamebase64. This chapter also draws on interviews with Beam Staff undertaken at Australian Centre for the Moving Image (ACMI) in 2006 by Noe Harsel and myself, and the more recent set of interviews I conducted as part of the Play it Again Project (2012- 2015). I also draw on extensive discussions held with ACMI collections officers regarding hierarchies, data-fields and taxonomies for entering microcomputing game titles and their associated materials and dependencies into the institution's collections management software.

To address questions of how online retro gamer communities' activities documenting and displaying videogames can inform the museum, I examine the two retro gamer fan sites in detail. This includes providing some introductory information about the two microcomputers that are their focus. I begin with a discussion of World of Spectrum, a site whose extraordinarily rich resources for *The Hobbit* have already been featured in Chapter 5. Building on this discussion, I examine the breadth and motivation of World of Spectrum before focusing, once more, on the types of resources it collects to document individual games. These resources are considered in relation to the site's taxonomy and the operation of its database. The second case study addresses Lemon64, a dedicated Commodore 64 community and touches on its sister site Gamebase64, a Commodore 64 preservation site. In comparison to World of Spectrum's focus on the collection of resources, Lemon64 is more community-focused and social, with extensive player chat, comments and reflections. Lemon64's taxonomy and design is addressed in relation to how it documents games. There is some reflection on the site's place in the larger network of Commodore 64 online sites. To facilitate this analysis,

representation of two games from Beam Software's back catalogue are addressed: *The Hobbit* (1982) on World of Spectrum, and *Way of the Exploding Fist* (1985) at Lemon64.<sup>451</sup> These works have been selected as examples of iconic games for the specific platforms. Through acknowledging the achievements of fan endeavours, I consider the scope for possible collaboration between fans and museums, and the benefits for each.

Fans' contribution to emulation practices has long been recognised in preservation research, with its value identified as important not just to videogames, but the preservation of an increasingly digital future and an already rich past.<sup>452</sup> But game fans' contribution is much broader than just allowing continuing access to executable software. As suggested in chapter 5, game fans have produced valuable documentation of games as experience. Since the 1990s, retro game fans have been dedicated to remembering and maintaining ongoing access to games for the microcomputers. In this chapter I suggest how museums may learn from, and build upon, the important work of fan sites in documenting the history of videogames and their socio-cultural value.

## 6.2 Fans

Retro gamer communities understood the threats to videogames' longevity well before the fragility of digital media was widely appreciated. The videogames market is governed by an economy of "perpetual innovation"<sup>453</sup>. Publishers and game developers typically abandon a hardware platform when something more powerful is released, expecting

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<sup>451</sup> Beam-Software, V. Megler, P. Mitchell, and S. Richie, *The Hobbit*, Melbourne House, 1982. Beam-Software, G. Barnett, G. Holland, and N. Brennan, *The Way of the Exploding Fist*, Melbourne House, 1985.

<sup>452</sup> Pederson; Kraus and Donahue.

<sup>453</sup> Kline, Dyer-Witheford and De Peuter.

gamers to follow suit. Not all gamers are, however, prepared to simply discard their investment in earlier platforms and the pleasures they afforded. The two platform-specific sites World of Spectrum and Lemon64 arose out of fans' awareness of the need to archive and preserve videogame artefacts. Whilst differing in their ambitions, these sites exist because fans took the initiative and decided to start documenting and preserving games and their related artefacts. Operating outside institutional structures, such groups are able to progress their work with minimal bureaucracy. They are agile, highly focused on what can be niche fields of inquiry, and able to draw on the combined knowledge of large communities, who freely share their skills, information and time. As the owner of World of Spectrum Martijn van der Heide says, "we have a very generous community".<sup>454</sup>

The rise of the home computer owes much to the passion of the hobbyist, so it is not surprising to find that microcomputing history has also been the domain of hobbyists and fan communities. Computer curator Doran Swade and historian John Palfreman explain how these enthusiasts championed the micro:

...while the corporate bigwigs shunned the microprocessor and dismissed the idea of small computers, others were wildly enthusiastic. These were the hobbyists, the hackers, the nerds – highly technical people at the margins of society. They did not believe the computer, the 'neatest toy' to come along, should only belong to the likes of IBM.<sup>455</sup>

The efforts of fans are often trivialised as amateur, but this doesn't do justice to the ambitions of the owners and operators of the community sites interviewed as they share much with museum professionals. They are

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<sup>454</sup> Stuckey and Swalwell.

<sup>455</sup> Jon Palfreman and Doron Swade, *The Dream Machine: Exploring the Computer Age* (BBC Books 1991).108

motivated by high ideals, dedicated to collecting and preserving this content because they believe it is in the public interest. For instance, van der Heide writes, “I... feel a great need to preserve our digital heritage.” His ambitions are very public-minded and he states, “Everything we have belongs to the public”.<sup>456</sup> The site owners are thinking about the future and have genuine concerns and preservation strategies for the long-term needs of games software. These sentiments are evident in this excerpt from Lemon64 and Gamebase64 admin, Mayhem, who explains:

To be honest, if Lemon64 went away, I'm sure another C64 based community would spring up, and preservation in terms of games wouldn't be a problem because that's what Gamebase64 is mostly for. And being on the web is the secondary concern to actually hav[ing] these files just in our possession. If the internet disappeared tomorrow, we'd still have everything we've ever worked on right here. The only thing lost would be any information of interest directly posted in the forums, and that would depend if anyone has made local backups or not. Some of us have been around long enough to know that nothing is ever safe unless you have a backup, if not two, made.<sup>457</sup>

The term ‘fan’ doesn’t seem adequate to convey the mix of deep, expert knowledge, and the practices and significance of what these communities of people do. ‘Retro gamer’ does not seem adequate either, as the term can be applied simply to the activity of playing historical games made accessible through commercially published ports and bundles, many of which have been significantly adapted (see Newman 2012). ‘Retro gamer’ can also be used to describe engagement with a style of contemporary

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<sup>456</sup> Martijn van de Heide Interview, 25 July, 2012.

<sup>457</sup> Mayhem Interview, 21 August, 2012.

games that draw on the features of historical games (see Garda 2013).<sup>458</sup> In the absence of a better term, 'fan' is used here in the sense it has developed in Cultural Studies, where the productivity of fan cultures has been thoroughly recognised and explored.<sup>459</sup>

In his reflection on the activities of retro gamers, David Heineman characterises retro gaming more specifically as a personal hobby that involves participation in a larger community and culture of like-minded aficionados of older games. Retro game communities, he reflects, are generally monotheistic, dedicated to the appreciation of a specific platform, game or goal.<sup>460</sup> He correlates their activities with Henry Jenkins' industrious fan communities, defined as "Expansive self-organizing groups focused around the collective production, debate, and circulation of meanings, interpretations, and fantasies in response to various artifacts of contemporary popular culture".<sup>461</sup>

### 6.3 On Line Archivists

In preparing the *Hits of the 80s* exhibition, I found that I was unable to source information about Beam Software's games of the 1980s from traditional institutions for the collection and exhibition of moving image culture or computer science.<sup>462</sup> Yet I discovered a wealth of information

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<sup>458</sup>Newman, *Best Before: Videogames, Supersession and Obsolescence*; Garda.

<sup>459</sup>Jenkins, *Convergence Culture: Where Old and New Media Collide*; Jenkins, *Fans, Bloggers, and Gamers: Exploring Participatory Culture*; Baym, *Tune In, Log On: Soaps, Fandom, and Online Community*; Baym and Burnett; Angela Ndalians, 'Chasing the White Rabbit to Find a White Polar Bear: Lost in Television' in Roberta Pearson (ed), *Reading Lost: Perspectives On A Hit Television Show* (IBTauris 2009); David S Heineman, 'Public Memory and Gamer Identity: Retrogaming as Nostalgia' (2014) 1 *Journal of Games Criticism* 1.

<sup>460</sup>David S Heineman, 'Public Memory and Gamer Identity: Retrogaming as Nostalgia' (2014) 1 *Journal of Games Criticism* 1.

<sup>461</sup>Henry Jenkins, 'Interactive Audiences? The "Collective Intelligence" of Media Fans' [2002] *Fans Bloggers and Gamers Exploring Participatory Culture* 137.

<sup>462</sup>The Strong Museum's ICHEG Online Collection has an entry for *The Hobbit* (1984) for the Apple II. It is, however, credited as a US game with no mention of Beam Software. The web entry from ACMI's 2006 exhibition *"Hits of the Eighties: Aussie Games that Rocked the World"* is archived at Pandora and on The Wayback Machine.

available at the sites of retro gamers and microcomputer enthusiasts. The web has enabled specialist interest groups such as World of Spectrum and Lemon64 to develop a public face for their collections, archives and projects. These community-created sites are open 24 hours and are not subject to the traditional, top-down hierarchies of museums. With their invitation to participate and their collections organised around the demands of the user community, they can offer experiences that feel more relevant to users than museums' often more static and didactic fare.<sup>463</sup>

### 6.3.1 World of Spectrum

The World of Spectrum is a most accomplished site in terms of its archivist ambitions. It is a self-proclaimed library of all things Spectrum, boasting over 24,329 unique titles.<sup>464</sup> The site has its origins in a database tool that founder Martijn van der Heide designed to document the Norwegian comp.sys.sinclair news group archive in 1994. To teach himself web skills for a new job in 1995, van der Heide migrated his Sinclair newsgroup database to the web.<sup>465</sup> Online, his Spectrum Games Database Tool attracted other Spectrum fans from around the world. Van der Heide's original database was dedicated to Spectrum games but, as the name suggests, World of Spectrum is an expanded version devoted to all things Spectrum. Its stated mission is to collect everything to do with the Spectrum platform.

As the "world's biggest archive of Spectrum related material", World of Spectrum has effectively collated the activities of numerous dedicated

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<sup>463</sup> Stuckey and Swalwell; Helen Stuckey, 'Play on Display: Videogame Collectives and Museum Culture' in Harriet Edquist and Laurene Vaughan (eds), *The Design Collective: An Approach to Practice* (Cambridge Scholars Publishing 2012).

<sup>464</sup> 'Archive' (*World of Spectrum*, 2013) <<http://www.worldofspectrum.org/archive.html>> accessed 10 March 2013.

<sup>465</sup> Martijn van de Heide Interview, Helen Stuckey, 25 July 2012.



Sinclair and retro games sites into its searchable database. Globally, Spectrum fans have pooled their knowledge and resources under its archival interface.<sup>466</sup> World of Spectrum has a number of ambitious goals. It manages a series of coordinated projects for converting all commercial software created for the Spectrum to an archival digital format plus the gathering of support material for all games and software such as scans of instructions, the capture of loading and in-game screens, and images of disk and tape inlays.

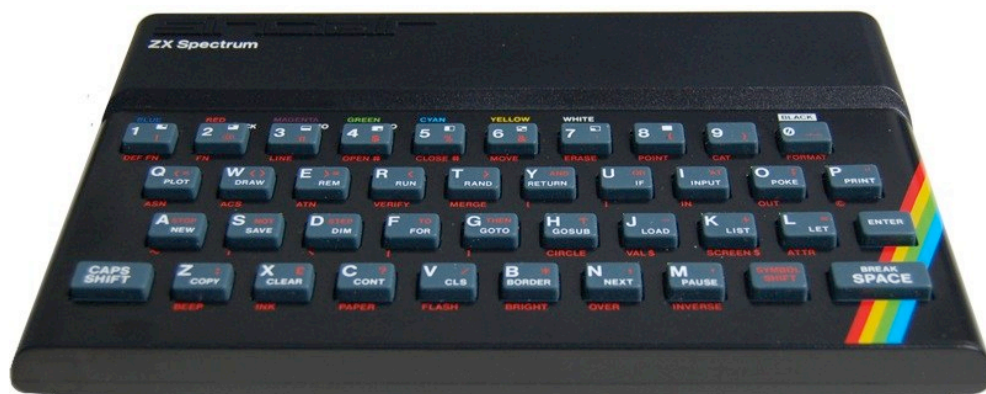


Figure 22; Sinclair Spectrum48k 1982

### 6.3.2 ZX Spectrum

The Spectrum was released in 1982 in the UK by Sinclair Research and boasted what was then a sizeable 48K memory (Figure 22). The system had a 3.5MHz microprocessor with no special graphics chip. But, as befitted its name and distinct from its black and white predecessors, the Spectrum could display 15 different colours. To keep costs down, its audio capacity was restricted to a single channel sound beeper with eight octaves. It sported a slim smart design with a rainbow motif slashed across its famous

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<sup>466</sup> The World of Spectrum's infoseek program is a ZX Spectrum specific search engine that draws on the major community created Spectrum databases WOS, SPOT\*On; SPEX; The MicroHobby; The Type Fantastic; The Tipshop; Philip Kendal's Spectrum 2.0 site and Chris Young and Duncan Snowden's ZX81 database. In addition it pulls data from a number of remote databases including Wikipedia and a selection of platform specific retro gaming sites. See "Welcome to Sinclair Infospeak", <http://www.worldofspectrum.org/infoseek.cgi>. Accessed 12 December 2014.

rubber keyboard. The ZX Spectrum was marketed as the most affordable home computer. It was promoted in the UK through a nationalistic campaign that identified its invention as representing the resurgence of British industrial dynamism, a campaign that made a local hero of its creator, Clive Sinclair.<sup>467</sup> The Spectrum sold hundreds of thousands of systems to the emerging home computer market. It dominated the UK market and its popularity spread across Europe and further afield, including to Australia, and it was even smuggled behind the Iron Curtain into Eastern Europe where its clones became popular<sup>468</sup>. Games and software for the Spectrum were available on cassette played through a separate drive. Where the Spectrum's predecessors, the more minimal ZX-80 and the ZX81, are described by Leslie Haddon in 1988 as 'self-referential machines' that offered "the intrinsic thrill of simply using a computer",<sup>469</sup> the Spectrum's additional memory and popularity ensured a wealth of software and applications for users to explore, including games. Its success as a games platform helped cement its appeal, but one of its most enduring attractions is, ironically, its limitations as a system. Hobbyists' fascination with mastering micros systems is well understood to be part of their appeal. Sumner notes that:

The significance of the limiting box is that it told the users 'what they were up against': it defined the parameters of the microcomputing exercise... Creativity in home micro culture, by and large, did not proceed by finding ways to escape the box, but by chafing against its insides.<sup>470</sup>

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<sup>467</sup> Sumner, "Today, Computers Should Interest Everybody" *The Meanings of Microcomputers*.

<sup>468</sup> Svelch, J., 'Say it with a Computer Game: Hobby Computer Culture and the Non-entertainment Uses of Homebrew Games in the 1980s Czechoslovakia'. (2013) *Game Studies*, 13(2), pp.1–15. Available at: <http://gamestudies.org/1302/articles/svelch>.

<sup>469</sup> Leslie Haddon, 'The Home Computer: The Making of a Consumer Electronic' (1988) 2 *Science as Culture* 7; Sumner, 'The Mighty Microcosm: Home Computers and User Identity in Britain, 1980-90.'

<sup>470</sup> *Ibid.*

The attraction of pushing against the limits of the system and having an intimate knowledge of its capacity is part of the ongoing appeal of microcomputers hardware and software to both its original users and new aficionados. This is confirmed both by Sumner and by Christina Lindsay in her study of TRS-80 retro gamers in the US.<sup>471</sup>

### 6.3.3 World of Spectrum as Archive

On the World of Spectrum's searchable database there are 10,724 games and 2217 text adventures.<sup>472</sup> Each of these titles receives a detailed entry on the site. One of the text adventures listed is Beam Software's *The Hobbit*. World of Spectrum has a refined classification system, and information on *The Hobbit* is addressed through a comprehensive set of data fields (Figure 23). In addition to the expected fields such as title, year of release, publisher, re-release, Author(s), number of players, controls and genre type, there are fields for information on releases for other systems, tie-in licences, UK release price and budget price and protection schemes. The 'additional information' section identifies that the game was sold as 'bookware'. It also details known errors in the code, which is the kind of invaluable information that can save players and curators many hours of grief.<sup>473</sup>

As for the game software itself, six versions of *The Hobbit* are available from the site for download, and can be played within the browser in a Java-hosted emulator created for the site by World of Spectrum community member Troels Noergaard.<sup>474</sup> The browser-hosted versions allow

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<sup>471</sup> Ibid; Lindsay.

<sup>472</sup> March 2014.

<sup>473</sup> Stuckey and Swalwell.

<sup>474</sup> Since March 2015 play in the browser games have not been operative – see discussion of the server closures effects on World of Spectrum later in this chapter.

immediate access to the playable games and opportunities for ready comparisons between versions.

**Full title** [Hobbit, The](#)  
**Year of release** 1982  
**Publisher** [Melbourne House \(UK\)](#)  
**Re-released by** [Sinclair Research Ltd \(UK\)](#)  
**Author(s)** [Beam Software \(Philip Mitchell, Veronika Megler\)](#)  
**Tie-in licence** [J.R.R. Tolkien \(UK\)](#) (book: [Hobbit, The](#))  
**Machine type** ZX Spectrum 48K  
**Number of players** 1  
**Controls** Keyboard  
**Type** Adventure: Text  
**Message language** English  
**Original publication** Commercial  
**Original price** £14.95  
**Budget price** £9.95  
**Availability** Available as both Perfect TZX and non-TZX  
**Protection scheme** None  
**Additional info** Appeared on tape 2, side A of the compilation [Tolkien Trilogy, The](#) (Beau-Jolly Ltd)  
 Participant in the [C&VG 1983 Golden Joystick Awards](#)  
 Features [Illustrated Adventure](#)  
 Features [Bookware](#)  
 This title has [known errors](#)  
 Also listed on [Wikipedia](#) and [Freebase](#)  
**Remarks** 2nd place in the C&VG 1983 Golden Joystick Awards - Game of the Year 1983.  
 Winner of the C&VG 1983 Golden Joystick Awards - Best Strategy Game.  
 There also was [Guide to Playing the Hobbit, A](#).  
 This was the first Spectrum game ever to sell a million copies.  
 Veronika remembers: "It was never released in the US, because some company owned the rights to the pictures, and won.  
 On the funny side - in a pre-release version I'd written in an angry dwarf that kept trying to kill you, and if you did something  
 me take it out again."  
**SPOT comments** re-issued at £9.95 without the book  
**Other systems** This title was also advertised for and/or published on the [Amstrad CPC](#), BBC Micro, [Commodore 64](#) and [MSX](#)  
 An unofficial conversion exists for the [Commodore Plus/4](#)  
**Score** 8.54 (207 votes) [vote](#)

**Download and play links**

Filename	Size	Type	Origin	Code	Barcode	D.L.
<a href="#">HobbitTheV1.0.tzx.zip</a>	31,200	(Perfect TZX tape image)	Original release		9780861616909	
<a href="#">HobbitTheV1.2.tzx.zip</a>	31,671	(Perfect TZX tape image)	Original release	MH246	9780861616909	
<a href="#">HobbitTheV1.2(TextOnly).tzx.zip</a>	31,736	(Perfect TZX tape image)	Original release		9780861616909	
<a href="#">HobbitTheV1.0.tap.zip</a>	45,782	((non-TZX) TAP tape image)				
<a href="#">HobbitTheV1.2.tap.zip</a>	34,009	((non-TZX) TAP tape image)				
<a href="#">HobbitThe(SinclairResearchLtd).tzx.zip</a>	31,211	(Perfect TZX tape image)	Re-release	G19/S		

**Additional material**

Filename	Size	Type
<a href="#">HobbitThe.qif</a>	3,915	(Loading screen)
<a href="#">HobbitThe.scr</a>	6,912	(Loading screen dump)
<a href="#">HobbitThe.qif</a>	2,637	(In-game screen)
HELPI <a href="#">HobbitTheV1.0.txt</a>	28,336	(English instructions)
HELPI <a href="#">HobbitTheV1.2.zip</a>	566,924	(Scanned English instructions)
HELPI <a href="#">HobbitThe.jpg</a>	97,133	(Game map)
HELPI <a href="#">HobbitThe_2.jpg</a>	143,334	(Game map)
HELPI <a href="#">HobbitThe_3.jpg</a>	211,387	(Game map)
HELPI <a href="#">HobbitThe_4.png</a>	159,869	(Game map)
HELPI <a href="#">HobbitThe_5.png</a>	324,576	(Game map)
<a href="#">HobbitThe.jpg</a>	328,048	(Cassette inlay)
<a href="#">HobbitTheV1.2.jpg</a>	454,465	(Cassette inlay)
<a href="#">HobbitThe(SinclairResearchLtd).jpg</a>	323,668	(Re-release cassette inlay)
<a href="#">HobbitThe.jpg</a>	512,609	(Advertisement)
<a href="#">HobbitThe_2.jpg</a>	300,583	(Advertisement)
<a href="#">HobbitThe_Manual.jpg</a>	116,058	(Manual)
<a href="#">HobbitThe_OriginalPackaging-Back.jpg</a>	67,725	(Original packaging)

Figure 23; World of Spectrum – *The Hobbit*

World of Spectrum's classification system, developed by the site administrators, represents a strong understanding of the medium and the needs of their user community. Credits are provided for publishers and authors. Beam Software, Megler and Mitchell are all listed as authors of *The Hobbit*, although individual roles are not specified. Each 'author' and 'publisher' entry is hyperlinked, which means that visitors are one click away from seeing World of Spectrum's complete catalogue of entries for a selected person or company. The 'Remarks' section addresses itself to more random information such as: the awards *The Hobbit* won; a comment from Megler lamenting that "Fred and Phil" made her take out the angry dwarf who tried to kill you and then, in response to a specific player action, became a randy dwarf and then followed the player round propositioning them. There is also a link to World of Spectrum's entry for David Elkan's *The Guide to Playing the Hobbit*. Elkan's book has its own entry on the site that includes reviews and adverts for it. The book itself, scanned in full, can be downloaded as a PDF.

World of Spectrum's resources supporting *The Hobbit* are remarkably rich. The 'Additional Material' for the titles is expansive and, at the time of writing, consists of nearly 200 items, of which 16 are feature magazine articles, 17 are published reviews, and 11 are letters. There are an additional 34 news articles, 6 maps, 4 POKES and 105 tips.<sup>475</sup> The resources that World of Spectrum has amassed for *The Hobbit* are not, however, curated in any sense for engaging access. They are merely listed, chronologically under the entry for *The Hobbit*. There is no critical framing and no content hierarchies within the material. The most comprehensive magazine features and interviews are given equal weight as the most trivial

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<sup>475</sup> September 2014. Since March 2015, links to access the majority of this material has not been active. See discussion in the chapter.

mention within a magazine. In addition, whereas World of Spectrum encourages its users to support the site through contributing material, it gives the community little voice within the archives except within the adjacent forums. *The Hobbit* has a few recent reviews (4) from site users and a score of 8.64 out of 10 from the site's community (207 votes). In contrast, Lemon64 is very focused on community and therefore foregrounds its community's voices, memories and recollections of individual works.

#### 6.3.4 Lemon64

Lemon64 started in 1998 as a hobby project by Swede, Kim Lemon. Lemon established the site to complement his Lemon Amiga web project as at the time he felt there were no good Commodore 64 game sites. On the Lemon64's history page he notes that that "Since 1998 a lot of things have changed. Lemon[64] isn't only a game archive anymore, but also one of the world's most popular C64 communities."<sup>476</sup> Lemon64 is user-focused and the site sports a magazine-like design that is far more enticing than World of Spectrum's simple listings of assets. Lemon64's front news page has monthly game reviews, notification of Commodore 64 events and information of releases of new Commodore 64 games and re-releases of old. As Kim Lemon states, Lemon64 is home to a very convivial group of Commodore 64 fans, focused on enjoying the games, and sharing their memories and their passion for the Commodore 64. 'Mini Chat' ticks over in the corner and the forums are active with monthly game challenges, offers of support with emulation issues, and general Commodore 64 'noodling'.<sup>477</sup>

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<sup>476</sup> Kim Lemon, 'Site History' (*lemon64*, 2002) <[http://www.lemon64.com/?game\\_id=2824](http://www.lemon64.com/?game_id=2824)> accessed 30 August 2012.

<sup>477</sup> Stuckey and Swalwell.

Lemon64 has nearly thirteen thousand registered users. It is a popular destination for Australians. A survey of the site based on data logs of two million visits determined that Australians were in the top 5 nationalities represented. Germany (6.3%) was the highest, followed by the United Kingdom (4.0%), Sweden (3.0%), Australia (2.7%), and then Finland (2.5%).<sup>478</sup> In addition to the Europeans and Antipodeans, Lemon64 has members from Africa, Eastern Europe, and North and South America. It is truly a global community. A glimpse of Lemon64's birthday list for a random date indicates a varied age group from 18 to 60 but with a majority clustered in their mid to late 30 and early 40s.<sup>479</sup> These are ages that suggest that for many of the community the Commodore 64 played a role in their childhood. This idea is reinforced by the introductions of new members on the forums where many people recount the importance of their youthful encounters with the Commodore 64. The social focus of Lemon64 has parallels with the camaraderie and support of hobbyist clubs of the 1980s and the jocular C64 fandom found in magazines of the era such as *Zzap!64*. Lemon64's emphasis is not simply nostalgia but is very dedicated to knowledge sharing. The central role of the forum is to assist members with their hobby – discussing games, assisting collectors locate items, and trouble-shooting old technology and new emulation techniques.

At Lemon64, the pleasure of remembering and enjoying the old games takes precedence over the serious business of preservation. Moderator and administrator Mayhem explains how Lemon64's companion site, Gamebase64, takes a more formal role in preservation. Mayhem explains the different ambitions of the sites as follows:

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<sup>478</sup> Lemon.

<sup>479</sup> The calendar date providing these ages was 11 December 2015.



Figure 24: Commodore 64

Lemon64 is a community first and foremost. It's there for people to come together, share news, advertise releases, ask for help, spill details on the latest acquisitions, and basically bump heads with likeminded individuals. Gamebase64 is all about keeping games alive, although the forum exists as a conduit for people to report issues, correct information and ask for assistance.<sup>480</sup>

### 6.3.5 Commodore 64

The Commodore 64 also has a passionate fan community. In contrast to the ZX Spectrum, the Commodore 64 was designed with games in mind. Its 6510 microprocessor was capable of supporting two high-resolution graphics modes, smooth scrolling sprites, bit mapping, character collision resolution, and character-mapped graphics. Its SID sound chip provided three channels of complex sound offering a full 8 octaves each. It was the perfect game machine of its era. It could be plugged directly into a TV like a game console. It had two joystick ports compatible with the popular Atari

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<sup>480</sup> Mayhem Interview, 21 August 2012.



joysticks and games could be loaded from cassette through the datasette drive and, later, through a floppy disc drive. Its US advertising campaign made its purpose explicit, stating “Why buy a video games machine when you can buy a computer?”<sup>481</sup> The Commodore 64 quickly attracted developers to create games for it and then held its popularity with gamers for over a decade, creating a sizeable legacy of games and fans. In contrast to the DIY culture of Spectrum hobbyists, Haddon characterises the Commodore 64 as a “software player” whose users were able to draw on a wealth of consumer software for entertainment.<sup>482</sup> In addition to its passionate games community, the Commodore 64 attracted a large demoscene dedicated to pushing the limits of its sound and graphics capacity and enjoying the pleasures of ‘chafing against the box’.<sup>483</sup> That creation of a very separate and identifiable community of demosceners, compared to the ubiquity of the practice of making and sharing content on systems like the Spectrum, gives some credence to Haddon’s observation.<sup>484</sup>

### 6.3.6 Lemon64 Game Database

Lemon64 has a database of 4122 Commodore 64 games. It offers a more enticing and user-friendly design and interface than World of Spectrum. Graphic elements such as box art and screenshots are showcased so as to be immediately visible without additional ‘clicking’. A one line review of the game can be read at a glance and the overall ‘look and feel’ of Lemon64’s entries is much more inviting than World of Spectrum’s lists. The entire

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<sup>481</sup> Haddon.45

<sup>482</sup> Ibid.

<sup>483</sup> Demosceners are a subculture who creates standalone programs, artistic works that showcased their ability to push the limits of a platforms system. Demoscening evolved in part from cracker culture, gamers cracking games security to enable them to be copied would leave their own little signature animations showing off skills not just in hacking but their coding and artistic credentials.

<sup>484</sup> The Spectrum’s demoscene was far less defined in comparison to the C64 except in Eastern Europe, where the Spectrum and its clones were the most common systems which not only had a certain cult status among users but continued to be used for a much longer period than in the west. Szilard (Moleman) Matusik, *Demoscene: The Art of Algorithms* (MolemanFilm 2102) <<http://www.molemanfilm.com/>>.

right-hand column for an entry on the game database is dedicated to community activities. Pride of place goes to how members have rated it. Next, how many times it has been downloaded, followed by the number of members who have the game in their personal collection, and finally, but most importantly, a lively comments section.

On World of Spectrum's database I examined the entry for *The Hobbit*, while on Lemon64 I researched Beam Software's other big hit of the 1980s, *The Way of the Exploding Fist*. A massively popular Commodore 64 game, *The Way of the Exploding Fist* was one of the first karate games for the home computer.<sup>485</sup> It was designed by Gregg Barnett and combined his passion for Bruce Lee action films and sports simulations. Barnett began the design process by mapping sets of fight moves and combinations favoured by Bruce Lee in his movies onto a Commodore joystick. He determined how he could make the moves and their combinations feel fluid and intuitive to the player, trying to match Bruce Lee's fighting style to the logic of the joystick.<sup>486</sup> To create the game's collision detection, Barnett built his own editor that plotted each impact animation frame-by-frame, giving the game the accuracy he wanted.<sup>487</sup> Working with Neil Brennan, Beam's sound designer, a gratifying set of digitised crunches and yells were added coupled to the collision detection that bring a rewarding tactility to the game. The game used Beam's custom fast loader, the 'Pavloada', that allowed for sound and pictures during loading, to add the infamous 'Bruce Lee' scream to the tape loading.<sup>488</sup>

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<sup>485</sup> *The Way of the Exploding Fist* is predated by Jordan Mechner's Apple II release of *Karateka* (Broderbund, 1984). *Karateka* is more simplistic in its fight controls. There are also a number of one-on-one arcade fighting games such as the Japanese *Karate Champ* (Techno, 1984), which was ported to the Apple II and Commodore 64 in 1985.

<sup>486</sup> Gregg Barnett, Interview by ACMI, Video recording, ACMI, April 2006.

<sup>487</sup> Edge Retro, 'Way of the Exploding Fist - Interview with Gregg Barnett' [2004] *Retro Gamer* <<http://www.acorn-electron.co.uk/eug/67/a-expl.html>>.

<sup>488</sup> Created in-house at Beam Software by Andrew Pavlumanolakis.

Barnett plotted the moves and planned the game, writing his code first by hand. Six weeks in, he compiled his first version of the two-player game. The enthusiasm of Beam's staff for playing this initial compile gave Barnett confidence in the game's appeal. After polishing the two-player game, he dedicated himself to developing the AI for the single player experience, which saw him analysing how people played the game in order to develop a list of variables for the AI. In 1985, the new release was reviewed by the British magazine *Zzap!64*. Gary Penn commented on how intelligent and tough to beat the computer was. Julian Rignall applauded the arrival of a karate sim for the Commodore 64, enthusing, "it has ...fantastic sound effects, state of the art animation and brilliant gameplay." Paul Sumner took it up a level, and exclaimed, "the graphics and sound are terrific, the only thing that stops this game short of total realism is blood."<sup>489</sup> This *Zzap!64* article can be viewed on the game's entry on Lemon64's database. Unlike World of Spectrum, with its archive of hundreds of documents from the era for *The Hobbit*, Lemon64 only has a copy of the manual, three advertisements and this lone article.<sup>490</sup>

### 6.3.7 Lemon64 as a Memory Archive

Lemon64's game taxonomy does not take quite the same shape as World of Spectrum's. The game's title, date and publisher feature on the top of the page. This information is how most people would identify a game, as developers were less well known to consumers than publishers. Whilst 'developer' is a searchable category on Lemon64, and generally lists first, it defaults to 'copyright' when this is credited to the developer.<sup>491</sup> For *The*

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<sup>489</sup> Gary Penn, Paul Sumner and Julian Rignall, 'ZZAP Test - Way of the Exploding Fist' [1985] *Zzap!64* <[http://www.gb64.com/oldsite/gameofweek/4/gotw\\_wayofexplodingfist.htm](http://www.gb64.com/oldsite/gameofweek/4/gotw_wayofexplodingfist.htm)>.

<sup>490</sup> Stuckey and Swalwell. This paucity of material does not reflect the numerous reviews, articles and interviews that the game received in the 1980s.

<sup>491</sup> Micro Forte games offer an example of this on Lemon64 where *Demon Stalker* (1987, EA) is credited with 'developer' "Micro Forte" and *Fire King* (1989, SSG) with 'copyright' "Micro Forte".

*Way of the Exploding Fist* 'copyright' is listed as "Beam Software", a potentially problematic accreditation (see discussion Chapter 3).<sup>492</sup> Authorship on Lemon64 is broken down into areas including coder, graphics, design, titlescreen, and musician. No hierarchy is presented for coders, so the additional code provided by David Johnston for *The Way of the Exploding Fist* is given a straightforward code credit, next to Barnett's. Other fields include: the number of players; genre; alternative names the game has been released under; related games (in this case, sequels) and conversions. As the C64 was renowned for its superior audio chip, music is featured with options for 'listen', 'download', and information about the SID available. Three different images for box art are on display and six screenshots. The game is available to download, but, unlike the ease of the play-in-the-browser games offered by World of Spectrum, a user would need to understand the format and emulation requirements to get it playing on their system.

At the time of writing, the site has 107 comments from Lemon64's community on *Way of the Exploding Fist*. These have been collected over the last 12 years of site activity.<sup>493</sup> Some are simple one-liners stating the game's 'classic status,' but many are more serious meditations on *Fist*'s game mechanic and tactical gameplay, including the temptation to use the infamous unbeatable leg sweep in single player (IPAndrews 2002-02-13, Rod Maclean 2002-09-19, jimatlod 2002-11-25, SRRAE 2003-06-09 laalnanama 2006-12-13, Monk 2008-04-05, Fruitbat 2004-07-19 etc.). The sound design and music for the game is frequently singled out for appreciation. Rob Bailey (2003-06-25), for instance, comments on the work's

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<sup>492</sup> Copyright was kept by Beam Software for Australian publishing rights when Melbourne House was sold to Mastertronic in 1987. Beam International / Melbourne House put some of its old 1980s games up as downloads on their web site in the 1990s.

<sup>493</sup> In September 2014 In August 2012. there were 95 comments.

## Chapter 6 Retro gaming Community Sites and the Museum

“serenely gentle oriental atmosphere”, Skippy (2003-1-23) applauds the games “superb sampled screams and yells”, and Andy (2003-12-23) expresses his love for the sound effects, noting, “it makes a really satisfying smack noise when you land a kick in an opponent’s face”.



Figure 25: Lemon64 - The Way of the Exploding Fist

How players first encountered the game is also documented. Mingle (2007-11-0) saw it reviewed in *ZZap!64*, Joti (2004-8-29) played it at his best mate’s house, and bandicoot (2002-07-11) played it first at the local computer shop, inspiring him to purchase a C64 the next day and miss a week of school while he mastered the game. Meanwhile, Doug (2002-05-13) recounts, “the local Sears was dumb enough to have this game installed on a C64 on display”. He explains that he “used to love rebooting and turning the volume all the way up then seeing everyone jump when the initial Hi YAA

hit" (the sampled Bruce Lee scream on the load screen). Some comments are even more personal, with both Marko (2002-10-06) and Melante (2012-05-13) citing the game as the reason they took up karate as a sport.<sup>494</sup>

Such comments offer a rich archive of players' relationships to the game, some thoughtful gameplay analysis and much reflection on how *International Karate* (1986), System 3's later, very popular and highly derivative, game for the Commodore 64, compares. A survey of these comments reveals that many players were never able to complete *The Way of the Exploding Fist* by reaching the top levels (even with the notorious sweep kick cheat). Whereas today this might be interpreted as a design failure, these remarks recount how for Commodore 64 players in the 1980s it was seen as testament to how worthy a challenge the game offered. It is a subtlety that reminds us how important Newman's plea, to understand a game as it was played, is.<sup>495</sup>

It is clear from these descriptions that World of Spectrum, Lemon64, and Gamebase64 have made significant contributions to the remembrance and longevity of these software titles.<sup>496</sup> The information represented on these sites accords with the three kinds of discourses identified by Jakko Suominen within games historiography: historical, heritage and retrospective.<sup>497</sup> Lemon64, however, is the only site amongst these examples that profiles retrospective discourse – the memories of the ordinary user. These player recollections, I maintain, provide important understandings of the games as experienced. In his assessment, Suominen

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<sup>494</sup> 'The Way of the Exploding Fist - Comments' (*Lemon64*)  
<<http://www.lemon64.com/?name=way+of+the+exploding+fist>>.

<sup>495</sup> Stuckey and Swalwell.

<sup>496</sup> Ibid.

<sup>497</sup> Jaakko Suominen, 'The Past as the Future? Nostalgia and Retrogaming in Digital Culture' (2008) 11 *Fibreculture* 1 <<http://eleven.fibreculturejournal.org/fcj-075-the-past-as-the-future-nostalgia-and-retrogaming-in-digital-culture/print/>>.

originally dismisses retrospective discourse as too trivial to be of value, lacking the richness of more orthodox research material and steeped in nostalgia. He later concedes that it has the potential to be “reflective and even critical”, a position that supports my observation of player recollections’ capacity to stress the emotional and social relations of users with games.<sup>498</sup> I propose that, rather than discounting these memories as inconsequential, they can provide the curator and historian with a rich and varied record of how people engaged with videogames.

## 6.4 Working Together to Remember Games

Cultural institutions are increasingly recognizing that the preservation of and access to videogames falls within their mandate and are exploring what is involved in incorporating videogames into their collections.<sup>499</sup> Cultural institutions, however, are not the main repositories of knowledge on videogame history. Fan communities such as World of Spectrum and Lemon64 have dedicated decades to documenting and archiving microcomputer games of the 1980s. It makes sense for museums to reflect on how they might work cooperatively with these specialist communities. Museums, collectors and fans face many of the same challenges in their ambitions to preserve historical games and can complement each other’s strengths.<sup>500</sup> This is a proposition consistent with the findings of the ‘Preserving Virtual Worlds Report’, which recommends that:

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<sup>498</sup> Suominen, ‘Retrogaming Community Memory and Discourses of Digital History.’ 5.

<sup>499</sup> The Museum of Modern Art, New York, is collecting games as interaction design; the Strong Museum of Play, Rochester, has a dedicated digital games collection and is actively pursuing the archives of North American developers. Many National Libraries are involved in projects to develop software preservation solutions such as Europe’s PLANETS and KEEP project consortiums (involving the National Libraries of France, Britain, Germany, Denmark, the Netherlands and Austria, and the US Library of Congress) ‘Preserving Virtual Worlds’ project. ‘Preservation and Long-Term Access through Networked Services: Keeping Digital Information Alive for the Future’ (PLANETS 2006 - 2010) <<http://planets-project.eu/>>; ‘Keeping Emulation Environments Portable’; McDonough and others.

<sup>500</sup> Stuckey and Swalwell.

[Cultural institutions should] help develop preservation systems that are accessible by and can accept contributions from the gaming community. The How They Got Game project, as part of the Preserving Virtual Worlds efforts, has established a sub-collection within the Internet Archive's moving image collection called "Archiving Virtual Worlds." It contains video documentation of a large number of virtual worlds, much of it created by those worlds' users. Efforts such as this, that provide a stable environment in which to preserve the contributions of the gaming community and assist them in documenting their own activities and culture, are essential to the preservation of computer games and interactive literature. Moreover, such efforts help promote dialog among librarians, archivists and curators and the larger gaming community, and help build the partnerships essential to preservation activity in this field. The Library of Congress and members of the National Digital Stewardship Alliance should seek out further opportunities for such collaborative efforts with the gaming community."<sup>501</sup>

The Lemon64 and World of Spectrum site administrators interviewed were very willing to collaborate with museums and share their knowledge.<sup>502</sup> When asked what advice he had for institutions that want to preserve Sinclair Spectrum games as playable experiences, Van der Heide says, "use the tools that are available or ask for our help."<sup>503</sup> Mayhem's response for Commodore games was similar, "There is no point duplicating what has been done, or reinventing the wheel. So it is apparent

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<sup>501</sup> McDonough and others.10

<sup>502</sup> Stuckey and Swalwell.

<sup>503</sup> Martijn van de Heide Interview, Helen Stuckey, 25 July 2012.



that the will is there for collaboration and that museums should align or negotiate with those preservation groups who have already done the work, and make an agreement to share.”<sup>504</sup> Museums need to embrace these communities for their knowledge, their skills, their collections and their attitudes to display and access. The generosity and archives of these communities can help museums shape and build their specialised collections that address specific curatorial criteria such as ‘the local’.

There are advantages in collaboration for both museums and fan communities. The ‘Preserving Virtual Worlds Report’ has identified tools and emulation as key areas for collaboration. Fan communities have dedicated many years to developing tools to emulate hardware and copy games software for preservation. The World of Spectrum, for example, has a number of interrelated archival projects coordinated by a team of nine geographically dispersed administrators. The group’s main project involves converting all commercially written tape software for the Spectrum into World of Spectrum’s custom TZX file format. The TZX format exactly replicates the original tape content for the Spectrum, including the custom loaders many of which operated as copy protection. World of Spectrum provide extensive information, ranging from custom database programs for the Spectrum to a comprehensive rundown on working with TZX utilities, on their dedicated Utilities page. Mayhem, an administrator who works across both Lemon64 and Gamebase64, explains that, although he does not write emulation tools himself, “I...use...[them] and...feedback to the programmers on all fronts about issues and improvements. First step of testing that a backup works is to run it in an emulator, although if it fails, [it] doesn’t mean it’s gone wrong, it could be that the emulation can’t

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<sup>504</sup> Mayhem Interview, Helen Stuckey, 21 August 2012.

handle it.”<sup>505</sup> The World of Spectrum offers similar advice about emulation in its guide to making TZX file copies of game tapes: “Although most games will work on a variety of machines [emulators] sometimes they can crash if you use the wrong model. This doesn’t mean your tzx file is wrong, the opposite in fact, you have managed to capture the same bugs as the original had!”<sup>506</sup>

The idiosyncrasies of emulation requires expertise from the community not only in developing hardware and software tools, but also in having a detailed knowledge of the games themselves. Intimate knowledge of these systems ensures that game performance and system performance is correctly emulated. These communities have detailed knowledge of early operating systems and other often arcane details on how to run a game and how games run including file types, loading times, display technology and controllers. Retro gamer communities working with historical game files have also acquired expertise at recognising and addressing the symptoms of media decay, bit rot, and more conventional damage to magnetic tape and other storage media.<sup>507</sup> Van der Heide explains that the group at World of Spectrum are adept with tape preservation and “know how to deal with media even when it is deteriorated”.<sup>508</sup>

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<sup>505</sup> Mayhem Interview, Helen Stuckey, 21 August 2012

<sup>506</sup> T Barnett, ‘The Complete Newbie Guide to TZXing for the Sinclair Spectrum – A Beginners Guide’ (*World of Spectrum*, 2005) 12 <<http://www.worldofspectrum.org/TZXGuide.pdf>> accessed 1 September 2012.

<sup>507</sup> Stuckey and Swalwell.

<sup>508</sup> Martijn van de Heide Interview, Helen Stuckey, 25 July 2012.

#### 6.4.1 The Collective Intelligence of Online Communities

Online knowledge communities, such as Lemon64 and World of Spectrum, comprise a form of collective intelligence.<sup>509</sup> Pierre Levy's theory of collective intelligence describes the impact that internet technologies have had on cultural production and consumption. Levy begins with the idea that "no one knows everything, everyone knows something."<sup>510</sup> The capacity to share information online allows each individual member's knowledge to become available to all members of the community, freeing members from their individual limitations and expanding their knowledge and productivity. Levy's is a utopian vision that sees the internet as a tool to "mobilize and coordinate the intelligence, experience, skills, wisdom and the imagination of humanity".

Media theorist Henry Jenkins and games designer Jane McGonigal have both drawn upon Levy's theories to help understand the increasing significance of the productivity of online communities of fans and gamers.<sup>511</sup> Retro game sites further exemplify Levy's theory. Retro game knowledge communities have self-defined goals and shared projects where members combine skills and resources to produce collectively generated knowledge. They are able to generate a vast amount of research and resources, typically far beyond what a single cultural institution or researcher could undertake.<sup>512</sup>

The cooperative production of fan communities enables them to address large-scale tasks. World of Spectrum's goal, to collect all Spectrum software, is reliant on members of its community not just making their

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<sup>509</sup> Ibid.

<sup>510</sup> Pierre Levy, *Collective Intelligence* (Perseus 1997) 7

<sup>511</sup> McGonigal; Jenkins, 'Interactive Audiences? The "Collective Intelligence" of Media Fans'.

<sup>512</sup> Stuckey and Swalwell.

personal collections available, TZXing and sharing files, but also participating in laborious data entry and fact checking. The task is leviathan. Currently the site has over ten thousand games, more than two thousand text adventures, and over eleven thousand entries for utilities, educational and other software.<sup>513</sup> In addition, as demonstrated for *The Hobbit*, each one of these entries may then have hundreds of associated resources. The correlate of this collective labour at Lemon64 is the contribution of personal memories, solicited by a more social impulse.<sup>514</sup> Gamebase64, however, has a dedicated points system designed to celebrate and acknowledge community members' contributions to the end goal of preserving all game software for the C64. Points are awarded for providing information on games, with more points awarded for donating missing games, and identifying and fixing bugs.<sup>515</sup> The point system supports recognition of contributions within the community. It provides a 'leaderboard' to motivate activity and recognise community contribution. At Lemon64 forum, members are allotted titles that indicate their contribution to the site that range from 'Newbie' to 'Immortal Grandmaster of C64'. Whilst posting does improve your rank, it is not intended as an achievement system and these titles are directed to helping the community determine if they are speaking to authoritative members, moderators and administrators.

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<sup>513</sup> Ibid.

<sup>514</sup> Ibid.

<sup>515</sup> 'So You're New Here, Huh?' (*Gamebase64*) <<http://www.gamebase64.com/newwhere.php>> accessed 12 April 2012.

#### 6.4.2 Collaboration

The collective exchange of knowledge within online communities, argues Levy, challenges existing hierarchies of power. Online knowledge communities cannot be fully contained in the existing “bureaucratic hierarchies, media monarchies and economic networks” and destabilise their systems.<sup>516</sup> The ability to draw on an expansive knowledge community, coupled with the dynamism and responsiveness of exchanges within a collective intelligence, has the capacity, Levy suggests, to undermine traditional forms of expertise. This concept is apparent in the ‘ownership’ that the retro gamer communities have of game history. But, unlike the mix of voices and standards that define fan efforts in game history, a museum’s status and reputation is based on its being considered an authoritative voice. The quality of knowledge and data are, therefore, major considerations for museums. Museums, however, do not have a monopoly on quality. Many retro gamer sites are very concerned with quality, working to guarantee the fidelity of copies and establishing strict procedures for version control.<sup>517</sup>

The cataloguing of different ‘cracks’ of games by Gamesbase64, in addition to those with copy protection intact, is an example of a commitment to preservation of the original and to a transparency of process deployed by the site.<sup>518</sup> Cracked games may not be understood as representing authentic versions of the game and as being at odds with most memory institutions’ concept of the authentic object.<sup>519</sup> Preservation

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<sup>516</sup> Pierre Levy, *Collective Intelligence* (Perseus 1997) xxiv

<sup>517</sup> Stuckey, ‘Play on Display: Videogame Collectives and Museum Culture.’ Stuckey and Swalwell.

<sup>518</sup> Cracking is the disabling of software protection required to copy a game file. It frequently involved the addition of a ‘cracker signature’ to the game software.

<sup>519</sup> Kari Kraus and Rachel Donahue, “Do You Want to Save Your Progress ?”: The Role of Professional and Player Communities in Preserving Virtual Worlds Risks to Videogame Longevity” (2012) 6 DHQ : Digital Humanities Quarterly 1 <<http://www.digitalhumanities.org/dhq/vol/6/2/000129/000129.html>> accessed 7 November 2012.

concerns are, however, part of the motivation for Gamesbase64's practice. As Mayhem explains, "That's so we know which crack we're using, and if someone suggests a better/different version, we can compare. We try to pick the "best" version to use."<sup>520</sup> Given the relatively recent recognition of institutions mandated to preserve videogame heritage, and the lack of interest of most game publishers in doing so, communities have taken the initiative themselves to ensure this history is not lost. As Mayhem puts it: "Someone has to preserve history, and it certainly isn't going to be the games companies themselves. Without pirates and crackers, much of what was would be lost."<sup>521</sup> Whether museums agree with their approach or not, it is through the work of crackers and game fans that these games have been saved.<sup>522</sup> Their continuing circulation in retro games communities not only keeps them playable, but keeps them alive in the memories of players and developers.

In their treatment of fan-generated material, preservation discourses would benefit from avoiding the tendency to treat all online archives as an undefined mass of amateur archives but address them as specific groups with particular foci, expertise and skills (or issues). Concerns with fan resources can, however, be more seriously motivated than simply discomfort with working with non-traditional archives, such as the questions of legality, as expressed by Pinchbeck<sup>523</sup>.

Museums have long depended on outside experts to assist them with specialist collections, although these relationships might not be evident to

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<sup>520</sup> Mayhem Interview, Helen Stuckey, 21 August 2012.

<sup>521</sup> Mayhem Interview, Helen Stuckey, 21 August 2012.

<sup>522</sup> Stuckey and Swalwell.

<sup>523</sup> Barwick, Dearnley and Muir, 'The Barriers to the Preservation of Digital Games: Questions on Cultural Significance.'

outsiders.<sup>524</sup> These groups with their expert knowledge and skills may introduce practices that are at odds with museum conventions. This was the experience of curator Doron Swade regarding the support provided by the Computer Conservation Society, a specialist hobbyist group dedicated to restoring early computers to working order, to the London Science Museum.<sup>525</sup> Swade describes working with the group on the restoration of computers in the collection as a balancing act between the Science Museum's traditional understanding of its role being to protect the physical integrity of the objects in its care, and recognition of the importance of the knowledge gain in re-assembling those systems. The salvaged giant early super-computers had arrived dismantled, un-cabled and disarrayed. The re-cabling and repair of the systems by the Society could be understood as potentially damaging to the museum's obligation to ensure the integrity of historic objects, and was at odds with its archaeological, 'hands-off' approach to collection artefacts. The skill and expertise of the Society, however, meant they were able to restore and extend the life of these computers, creating a chance to further document them in the interests of public memory.<sup>526</sup>

Swade's story demonstrates the need for museums to work with expert communities who possess relevant technical expertise and cultural understandings. It also highlights the need to reassess assumptions about the handling of museum artefacts. Reflecting on the practices of retro gamer communities online, it is possible to envisage a way that museums

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<sup>524</sup> Stuckey and Swalwell.

<sup>525</sup> Doron Swade, 'Computer Conservation and Curatorship' (1990) 1 *Computer Resurrection: The Bulletin of the Computer Conservation Society* 8 <<http://www.cs.man.ac.uk/CCS/res/res01.htm>>.

<sup>526</sup> The Computer Conservation Society has also produced an emulator of the Pegasus for interactive display purposes at the museum.

might make these relationships with external expert groups more transparent and fluid.<sup>527</sup>

Museum culture is increasingly moving online, utilising digitised content and offering virtual access to parts of the collection. Museums are now examining the types of experiences and access visitors are looking for online with their collections. Whereas museums are practiced at adapting to the changing needs of audiences within physical exhibition spaces, many museums are still learning how to best cater for audiences online. Retro gaming websites are often very sophisticated in the range of experiences they offer audiences to engage with their collections.<sup>528</sup> As Whitney Museum curator Christiane Paul concedes, “It is not unusual that the websites of non-profit organisations are better designed, more comprehensive and technologically more sophisticated than a museum’s site.”<sup>529</sup> There is scope for museum professionals to engage in dialogues with site creators that may enhance online museum operations, informing the design of future online collections and interfaces. For instance, the search fields of retro gamer sites represent an understanding of what people are looking for and how they are engaging with material on 1980s games. World of Spectrum’s database has been refined over the last 18 years to both support the range of material collected and to reflect how users search and engage with it. One of World of Spectrum’s most liked features, reports Van der Heide, are the listings of magazine reviews, player letters, features, tips and pokes addressing specific games. These are all items prized by researchers and curators for their value in documenting the cultures of play of the era. Insights on what audiences seek out are

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<sup>527</sup> Stuckey and Swalwell.

<sup>528</sup> *Ibid.*

<sup>529</sup> Paul, ‘Flexible Contexts, Democratic Filtering and Computer-Aided Curating: Models for Online Curatorial Practice.’<sup>47</sup>



valuable to museums that are planning and designing videogame collections and their online presence.<sup>530</sup>

For fans, the collaboration with cultural institutions such as museums also has advantages. Institutions can better ensure that digital heritage is kept, fulfilling fan goals in protecting these legacies. Established institutions should be able to provide resources and support, easing the burden on volunteers. They can offer the continuity that community sites do not always enjoy, ensuring that the efforts of the ZX Spectrum community, for example, are preserved for the benefit of future generations of interested people and researchers.<sup>531</sup> It is a notion made germane with the disappearance of World of Spectrum in March 2015. Anxious posts appeared on retro gamer sites of all denominations, including Lemon64.<sup>532</sup> Slowly news emerged that World of Spectrum's server had died and the team were trying to locate a new server to host it. At the time World of Spectrum had already slipped into a sort of stasis following Van der Heide's marriage and move to Thailand in 2013 and had received fewer and fewer updates, the last official one being in January 2014. For its migration to the new server, administrator Lee Fogarty and two other volunteers struggled to rewrite the old code of the Infoseek engine so that it would work with new software. Within four weeks of its server crash, World of Spectrum was revived, but only in part. Many thousands of the entries' links are not currently operating on the site.<sup>533</sup> For example, on *The Hobbit* entry the game files remain downloadable but the play-in-the-

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<sup>530</sup> Stuckey and Swalwell.

<sup>531</sup> Ibid.

<sup>532</sup> 'World of Spectrum & the Tipshop Sites' (*Lemon64 Forum*, 2015)

<<http://www.lemon64.com/forum/viewtopic.php?t=55592&postdays=0&postorder=asc&start=25&sid=4391d2f1c8c8d238203536743baaf9b5>> accessed 23 March 2015; 'World Of Spectrum Has Disappeared' (*stardot.org.uk for users of Acorn computers and emulators*, 2015) <<http://stardot.org.uk/forums/viewtopic.php?t=9339>> accessed 23 March 2015.

<sup>533</sup> This is accurate for January 2016

browser games do not function. In addition, the hundreds of magazine articles, tips and pokes remain inaccessible. Regular updates on the forum attest to the intent to revive the site so that decades of work will once more be accessible, but there is no given date or guarantee that this will be achieved.

It is a clear reminder that World of Spectrum has no obligation to preserve or make this information accessible in perpetuity. Although it is beyond the remit of this research, it could be conjectured that projects such as World of Spectrum are the creation of a particular confluence of a generation of early computer hobbyists who are drawn to community and making things on their computers. Retro gamer sites, such as World of Spectrum and Lemon64, are dependent on the enthusiasm and skills of this particular generation. It is such recent history that it is not yet established as to whether later generations of gaming systems will continue to receive such conscientious archival treatment from communities of fans. The probability that these fan-created histories will die off with the waning interest of the generation of original fans makes the need for institutional collaboration more vital.

Digital preservation is not well serviced by the current legal landscape. Institutional collections are themselves concerned with issues of the legality of copying, cracking and circumventing of copy protections on videogames. It is necessary, therefore, to reflect on the situation between amateur and institutional archives. All three retro gamer sites discussed in this chapter are concerned about copyright, addressing it in a quite straightforward manner. World of Spectrum seeks permission where

possible,<sup>534</sup> whilst Lemon64 removes games files when they receive objections from rights holders.<sup>535</sup> Gamebase64 makes preservation copies of games but does not share the files online. Regarding the relationship between amateur and institutional archives and copyright, there are two key points I wish to make. First, the legal status of many early games is difficult to establish. Where Beam's parent publishing company, Melbourne House, was once the owner of the Beam games, the continuing histories of sales, takeovers and closures of both studio and publishing house over the past thirty years, have obscured the landscape. The current status of the games developed by Beam Software is that they are "orphan works" because their copyright owners cannot be traced.<sup>536</sup> Most government institutions are far from comfortable working with orphan works, as the required permissions cannot be gained. Even when a possible rights holder can be identified, companies may not be interested in investing resources to prove ownership of historic games that are perceived to have no value. Many early games thus exist in a legal grey zone. In contrast to the retro gamer sites, archival institutions may enjoy limited legal provisions to make digital preservation copies of works held in their collection, as is the case in Australia.<sup>537</sup>

Museums, libraries and archives around the world are currently engaged in tackling the issue of orphan works that profoundly affects access to materials in their collections.<sup>538</sup> The European Union and the United

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<sup>534</sup> World of Spectrum, for example, acknowledges permission from Beam Software

<sup>535</sup> Whilst Lemon64 has contacted owners to seek permission, Mayhem indicates that current practice is to remove any titles from the site upon the request of a rights holder.

<sup>536</sup> Corbett. For the exhibition, *Hits of the Eighties*, ACMI tried to identify a rights holder for Beam Software's games. Rights to the games were held at the end of the 1980s by separate companies for Australia and the UK and other markets. After consultation and searching, ACMI approached Atari, the company that, it was believed, the rights sat with. This company expressed no knowledge of the rights for these works, so there was never any formal confirmation of rights ownership.

<sup>537</sup> Stuckey and Swalwell.

<sup>538</sup> Corbett.

Kingdom have both passed legislation that allows a number of institutions, including museums, to make available works for which copyright owners could not be identified or located. The law determines that if, after “a diligent search”, a copyright holder cannot be located then a museum would be able to make the work available to the public or reproduce it for the purposes of digitisation, making available, indexing, cataloguing, preservation or restoration.<sup>539</sup> In Australia, the 2013 Australian Law Reform Commission (ALRC) ‘Inquiry into copyright and the digital economy’ consulted with galleries, libraries, archives and museums on orphan works. The report recommendations echo the legislation passed in the UK and the EU although, in 2016, the legislation is yet to be passed:

12.62 The ALRC proposes that the Copyright Act be amended to provide that remedies for infringement be limited where an orphan work has been used and a ‘reasonably diligent search’ has been conducted and the rights holder has not been found. The ALRC considers that this approach will promote the use of orphan works to further education, research and access to cultural heritage, without taking away all the rights of rights holders to their works.<sup>540</sup>

This raises the second point: in this environment, collaboration between museums and fan communities can ensure the legal preservation of digital game titles whether or not permission has been granted by a licence holder.

In addition, the hard work those retro gamer communities have dedicated to preserving game history ought to attract wider recognition

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<sup>539</sup> M.J., ‘Orphan Works: No Longer in Limbo’ (*The Economist*, 2013) <<http://www.economist.com/blogs/babbage/2013/05/orphan-works>> accessed 10 December 2015; ‘Intellectual Property’ (*National Museums Directors Council*, 2014) <<http://www.nationalmuseums.org.uk/what-we-do/contributing-sector/intellectual-property/>> accessed 10 December 2015.

<sup>540</sup> ‘Inquiry into Copyright and the Digital Economy’ (2013) <[https://www.alrc.gov.au/sites/default/files/pdfs/publications/12.\\_orphan\\_works\\_.pdf](https://www.alrc.gov.au/sites/default/files/pdfs/publications/12._orphan_works_.pdf)> accessed 10 November 2015. 261

than it does. Game fans are often modest and do not undertake this work for the glory, but having one's work and expertise recognised does matter. When the PVWR calls for the creation of systems that work with fan communities, we can assume that they include recognition and respect for the achievements of these communities. Legitimation that a project envisaged years earlier is significant is a meaningful reward, as Mayhem acknowledged in interview.

Helen Stuckey: What keeps you doing it?

Mayhem: It certainly isn't the promise of completing the job.

That part I don't think will ever happen, you just hope to get as close to the end as you can. A bit like counting from 1 upwards, there's always another number following the one you are currently on. Part of it is the reaction from people and the thanks you get, big or small, for contributing towards an archive of significance.<sup>541</sup>

Museums seeking to partner with fans can ensure that due recognition is given to the efforts of fan communities.<sup>542</sup>

### 6.4.3 Popular Memory

Archives, museums and galleries are sometimes referred to as 'memory institutions', yet the shaping of these 'memories' has normally been the dictate of the curator. In acknowledging that many museums have not been proactive in relation to videogames, museums now have the opportunity to experiment with new, more inclusive practices of collecting memories around videogames and gaming. An examination of the formats that self-organised fan communities have come up with to frame their memories reveals that, whilst many sites are motivated by nostalgia and people's past

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<sup>541</sup> Mayhem Interview, Helen Stuckey, 21 August 2012.

<sup>542</sup> Stuckey and Swalwell.

involvement with games and microcomputers, few sites have sections dedicated to recounting people's personal memories. Forums are the location for the richest recollections from individuals about playing games, tinkering with their systems and writing their own games. However, most sites do not recognise the value of this information within their preservation agenda and forums are usually seen as merely a social conduit. Video, a key preservation and useful memory tool, is also rarely integrated.<sup>543</sup> Lemon64's collection and display of player comments, whilst a social feature of the site, offers a rich archive of recollections of gameplay. World of Spectrum archives the expressions of players recorded in the magazine reviews, letters, pokes and tips of the era. Van der Heide thinks that museums could usefully help with the task of remembering playing these games through: "documentation of...memories: the magazines and fanzines. After all, those provide anecdotal evidence".<sup>544</sup>

These communities have not waited for the cultural monoliths to recognise the significance of early videogames and have begun the task of collecting, displaying and documenting these works in the new public space of the Internet. That does not mean that the different stakeholders cannot collaborate. Indeed, the site owners and administrators interviewed replied to the question of 'how might institutions work to preserve games as playable experiences' with the response, "ask us".<sup>545</sup>

## 6.5 Discussion

Where the preservation of born digital artefacts is concerned, the old silo models of cultural institutions, with their attempts to neatly apportion, delineate and contain responsibility, need to be reworked. Digital

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<sup>543</sup> The Internet Archive hosts the C64-GameVideoarchive.

<sup>544</sup> Martijn van de Heide Interview, Helen Stuckey, 25 July 2012.

<sup>545</sup> Ibid.

preservationists working across different types of institutions – libraries, archives, and museums – have much in common, both with one another and with skilled community-based game preservationists. This is not just a plea for knowledge sharing. The community sites discussed demonstrate the ways dispersed networks can work online. Lemon64's design, database fields and opportunities for participation reflect the more social and fan-based pleasures of sharing and remembering the games of the Commodore 64, whilst Gamebase64 is shaped by more formal preservation goals.<sup>546</sup> There is, however, a flow of information between the two sites. World of Spectrum uses its dedicated Sinclair infoseek engine to draw data from nine dedicated Spectrum databases.<sup>547</sup> In addition, it pulls contextual data from a number of remote databases including Wikipedia and the Internet Movie Database. Where games also appeared on other hardware systems, it consults a selection of other platform specific retro gaming sites including Lemon64 and Gamebase64.<sup>548</sup> World of Spectrum boasts that "With over 26,000 unique entries (24,000 software titles, 1,000 hardware items, 1,500 books) and more than 350,000 references, this is the most complete Sinclair encyclopaedia available on the Internet!"<sup>549</sup> In drawing data from these individually created sites, which themselves have sourced data from other online sites, World of Spectrum is not only able to acquire its encyclopaedic status but has further preserved this information through making it readily accessible and, in some cases, preventing it from being lost. Many of the sites that TipShop, one of the nine sites that World of Spectrum draws from, thanks as sources for giving them permission to reproduce tips, maps

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<sup>546</sup> Ibid.

<sup>547</sup> The dedicated databases are WOS, SPOT\*On (Jim Grimwood's book and magazine site); SPEX (Jim Greenwoods Advert index); The MicroHobby (magazine index database by Manuel Gómez Amate); The Type Fantastic (the magazine type-in database from Jim Grimwood); The Tipshop (collected gameplay tips by Nick Humphries and Gerard Sweeney); Philip Kendal's Spectrum 2.0 site; and Chris Young and Duncan Snowdens' ZX81 database.

<sup>548</sup> <http://www.worldofspectrum.org/infoseek.cgi>

<sup>549</sup> Ibid.

and hand-drawn solutions to numerous Spectrum games no longer exist, their links offering nothing but dead-ends and errors. These remind us once again that the resources compiled within personal and fan archives can quickly be lost as individuals move on with their lives or pass away.<sup>550</sup>

The 2012 UNESCO international conference “The Memory of the World in the Digital Age: Digitization and Preservation” emphasised the need for cooperation (between professional associations, organisations, industry and other commercial enterprises working in digital preservation), and the development of supportive policies by Member States (legal deposit, copyright exceptions, access). It further references the need for “the establishment of digital preservation models that close the existing gaps in institutional regulatory frameworks” and recommends exploring “a multi-stakeholder platform for the discussion of standardization, digitization practices and digital preservation”.<sup>551</sup> Most institutions do not yet have the expertise required to undertake preservation of complex digital artefacts.<sup>552</sup> As demonstrated by Swade’s story of working with the Computer Conservation Society, skillsets often exist amongst specialist hobbyist groups. Whilst new institutions might form part of an answer to preserving born digital content, successful models of distributed responsibility and collaborative effort could be sought from across communities. The specialist videogame community has shown that such distributed efforts can successfully combat threats to games’ longevity.<sup>553</sup>

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<sup>550</sup> These include sites by Graham Goring, Tor Gjerde and Drew Turpin. The Internet Archive’s Wayback Machine has captured some of this information, but not all sites or data formats have been saved.

<sup>551</sup> ‘Vancouver Declaration - The Memory of the World in the Digital Age: Digitization and Preservation’ (2012) <[http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/mow/unesco\\_ubc\\_vancouver\\_declaration\\_en.pdf](http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/mow/unesco_ubc_vancouver_declaration_en.pdf)>.

<sup>552</sup> Stuckey and Swalwell.

<sup>553</sup> Ibid.



The sites discussed in this chapter illustrate ways of working successfully with a dispersed international community to collect information and digital artefacts. Libraries, archives, and museums have a long history of collaboration with members of the public. In the development of Museum Victoria's Apple Computer collection, Senior Curator of Information and Communication, David Demant worked closely with the Melbourne based Internet Macintosh User Group Inc (iMug). The group helped Demant develop the collection themes and donated items to illustrate significant stories. Their knowledge not only helped define the collection, but the stories they shared revealed "the personal and social as well as the technical aspects of the items collected".<sup>554</sup> Trevor Owen suggests that this tradition of co-operation and value with expert volunteers and knowledge communities, which has been long applied to museums' local relationships with knowledge communities, needs to be extended online.<sup>555</sup> World of Spectrum and Lemon 64 demonstrate how collaborating online allows for direct conversation with niche communities and interested and knowledgeable individuals. I argue that retro gaming sites' success at building community and providing multiple ways for users to participate in contributing knowledge and resources to collections present useful models for the Museum to meet the goals of curating and collecting Australian games of the 1980s.

### 6.5.1 Taxonomy

I also suggest that the practices and design of retro-gamer sites can inform the Museum creating more coherent documentation, presenting information so as to enhance discoverability. In addressing the challenges

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<sup>554</sup> 'Internet Macintosh User Group (iMug) Collection' (*Museum Victoria*) <<http://museumvictoria.com.au/collections/themes/1523/internet-macintosh-user-group-imug-collection>> accessed 3 April 2014.

<sup>555</sup> Trevor Owens, 'Digital Cultural Heritage and the Crowd' (2013) 56 *Curator: The Museum Journal* 121-130 <<http://doi.wiley.com/10.1111/cura.12012>>.

of cataloguing Australian microcomputer games for the Play it Again Research Collection at ACMI, collections officers, Linda Connolly and Lynda Bernard<sup>556</sup> found that while a number of taxonomies exist for cataloguing historical games in libraries, archives and collections, there was not one universal approach. The efforts of traditional catalogues failed to address the complexity of a game's existence as multiple versions, across multiple platforms. The existing system could not easily accommodate a game's existence as original artefact and as encoded files, all with different dependencies to other items such as hardware platforms and peripherals and emulators.<sup>557</sup> To add to this confusion are the demands of new classification fields and the need to capture associated materials that speak to the game's historical significance. In their research, Bernard and Connolly focused on systems that both prevented "dissociation, one of the least obvious of the ten 'agents of deterioration'" and made the items more "discoverable". They determined that the taxonomies of the retro game community sites were the most useful for these purposes. Bernard states that the "more user-driven vocabularies are probably the most worth pursuing in any attempts to arrive at an agreed taxonomy for game collections."<sup>558</sup> In representing both the complexity of cataloguing historical games and their associated material, and in capturing how people comprehend, order and search for information, the fields created by retro gaming sites and refined through use by their community presented the most effective categorisation. Kraus and Donahue echo this view from their observations, suggesting that the metadata and context information

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<sup>556</sup> Lynda Bernard, 'Cataloguing video/computer Games – Pitfalls for New Players' (*Play it Again Project*, 2014) <<http://playitagainproject.org/cataloguing-videocomputer-games-pitfalls-for-new-players/>> accessed 2 June 2014.

<sup>557</sup> One of the challenges noted by Kraus and Donahue in preserving a videogame's software is that referring to it in the singular is deceptive. A single version of a videogame is actually made up of many hundreds of different 'objects'. Some elements may even be hidden depending on the settings of the operating system used to access it. Kraus and Donahue.

<sup>558</sup> Bernard.

contained on game community sites is “at a level many cataloguers would envy”.<sup>559</sup>

### 6.5.2 In Summary

This chapter investigated how retro gaming communities, operating outside legal constraints and building their own community networks online, have been able to test and develop successful methods for collecting, exhibiting and preserving early games. The important contribution these groups have played in creating tools for software preservation is central to game preservation studies. This, however, is not the focus of my research. I have presented other lessons that the curator might learn from these communities, the central one being identifying the need for museums to engage with expert groups online who are prepared to share their knowledge and expertise. In contrast to museum’s locked and siloed information, these sites have a more open approach to their collections, sourcing data from dispersed locations so as to provide richer information and avoid duplication of work. They encourage and invite a range of community participation, from simply ranking games to enlisting and co-ordinating the community in the complex tasks of locating and transferring historic code. Despite institutional anxiety around the authority of ‘amateur’ or user-generated data, the entries on these specialist retro gaming sites are often more rigorous than many museum collections’ data and generally more expansive. I argue for the need to consider online retro computing and game communities as an extension of the experts, non-museum amateurs and professionals, who have traditionally shared their knowledge and skills to enrich museum collections and exhibitions. I

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<sup>559</sup> Kraus and Donahue. There are a number of videogame metadata projects, including Game Metadata and Citation Project (GAMECIP), a multi-year IMLS-funded investigation of metadata needs and citation practices surrounding computer games in institutional collections supported by Stanford Libraries, Illinois University and the Preserving Worlds Project 1 & 2.

recommend that institutions need to focus less on how to make videogames work within their established systems for collecting and preservation, and look more to the practices and systems created by game fan communities for understanding and preserving digital culture in the 21st century. These activities include an emphasis on working with online knowledge communities and shared authority.

Access is a key consideration of my investigation, and my work with ACMI collections team has revealed the sophistication of the taxonomies developed by some community sites. These taxonomies have been refined by use to address the complex nature of videogames with their multiple components and collection demands, and to reflect how people search and access works. More than folksonomies reflecting social use, these taxonomies document ways of addressing the complexity of born digital artefacts.

Another central curatorial concern of this thesis is the need to document historical videogames' complex nature, capturing a sense of them as played. Once more I have argued the value of collecting player memory. Players' recollections are nurtured by the more social nature of these communities. Such accounts can be found both in dedicated comments sections and woven through forum discussions. These demotic memories provide valuable insights as to the gameplay of specific works and how these games were played. As established in Chapter 5, they are invaluable to the curator to invite a more meaningful understanding of historic videogames. Whereas the significance of game capture, speedruns, playthroughs and written walkthroughs have all been nominated as vital documentation for game preservation, the less substantial player memories have not been addressed. Suominen has identified their prominence within retro gamer discourses and, despite his description of them as 'trivial', he

also suspects they have some critical potential. Retro gamer community sites do not necessarily value these comments for their contribution to game 'preservation'. For Mayhem, it is the more conventional cataloguing and software preservation activities of Gamebase64 that keeps "games alive", whilst Lemon64 is simply about the pleasures of remembering games. Yet, I argue, for the curator, the spark that can help keep 'games alive' in the gallery, and elsewhere, lies with those memories of game culture and gameplay from another time.

Having established the potential of popular memory as a means to capture a multiplicity of encounters with videogames, and the differing kinds of experiences and significances that these recollections identify, I now look at an example of collecting popular memory of the 1980s.



## The Popular Memory Archive

## 7.1 Introduction

The Popular Memory Archive (PMA) offers a case study of what an online site for exhibiting a collection of Australian (and New Zealand)<sup>560</sup> microcomputer games of the 1980s might comprise. The collective memory resources created online by retro gamer communities inspire its design. In documenting a history of use, the PMA privileges personal accounts, oral history and player memories. This user-centric approach, designed to capture an understanding of how people engaged with videogames, seems most suitable for constructing a history of Australian games of the 1980s where the separation between playing and making games was not so profound.<sup>561</sup>

The chapter begins with a discussion of the design of the PMA, introducing its structure, contents and aims. It then examines some of the contributions to the site. These contributions are discussed in relation to the site's ambitions of collecting a lived history, asking what they can tell us about the culture of videogames in the 1980s. The opportunities for participation offered by the PMA are contextualised in relation to other museum projects engaging audiences online. The proposal of play-in-the-browser games, a feature that was central to the project's original conception as an exhibition, is discussed in relation to what hands-on gameplay offers in this context. In concluding, I consider the discursive,

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<sup>560</sup> New Zealand examples are discussed in this chapter where the information contributes to a broader understanding of the potential of the PMA.

<sup>561</sup> This chapter draws on a series of interrelated papers documenting the PMA for which I was the principal author. These include: Helen Stuckey and others, 'Remembrance of Games Past: The Popular Memory Archive', Proceedings from Proceedings of The 9th Australasian Conference on Interactive Entertainment: Matters of Life and Death (2013); Helen Stuckey, Melanie Swalwell and Angela Ndalani, 'The Popular Memory Archive: Collecting and Exhibiting Player Culture from the 1980s' in Arthur Tatnall (ed.), *Making the History of Computing Relevant* (IFIP Springer 2013) and Helen Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive', Proceedings of DiGRA 2014: What is Game Studies in Australia? (DiGRA 2014). Helen Stuckey and others, 'What Retrogamers Can Teach the Museum', *MWA2015: Museums and the Web Asia* (2015) <<http://mwa2015.museumsandtheweb.com/proposal/what-retrogamers-can-teach-the-museum/>>.



inclusive and questioning practices of the PMA as a means of exhibiting historic games. I propose that whilst the PMA utilises some traditional museum components, for example, combining story metaphors with classification and didactics, its search interfaces allow content to be accessed in open and non-hierarchical ways. This structure liberates the work from the representation of a singular curatorial interpretation, supporting the contribution of users, and allowing for fragmentary and plural interpretations. The PMA case study is presented as a means for institutions to collaborate with knowledgeable fans and retro gamer communities around the remembering and preservation of historical games. It offers a model for displaying games or other works when they are best represented through documentation of experiences and associated material rather than the display of an object.

### 7.1.1 The Popular Memory Archive

Launched in October 2013, the PMA forms part of the Play it Again game history and preservation project, addressing 1980s games produced in Australia and New Zealand.<sup>562</sup> An online exhibition, the PMA presents a selection of significant Australian and New Zealand games for microcomputers. Its complementary blog provides a means to discuss some of the Play it Again team's research and profile other researchers and contributions from developers, collectors and retro gamers.<sup>563</sup> Members of the Play it Again research team have created profiles for the selected games, creators and companies featured on the site, drawing on the project's historical research and collating assets from retro game communities online and off. In addition to the information on the game,

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<sup>562</sup> Play It Again is an Australian Research Council funded game history and preservation project focused on locally written digital games in 1980s Australia and New Zealand. It is collaboration with the Australian Centre for the Moving Image (ACMI), the New Zealand Film Archive (NZFA), and the Berlin Computerspiele Museum.

<sup>563</sup> The curated blog was on a monthly theme from November 2013 – September 2014 and has been operating on an ad hoc basis since then.

creator and company entries created by the team, discussion on the curated blog contributes to further understandings of the games and their significance.<sup>564</sup> The PMA is also designed to accept contributions from the public. These can take the form of comments, images, videos and other material. They can be in response to particular games, companies and blog entries or simply be shared in the 'contribute' section, allowing users to address areas unforeseen by the curators. The PMA aims to combine a history of production of microcomputer games in the specific national contexts of 1980s Australia and New Zealand with a history of their use and reception.<sup>565</sup>

The PMA user base grew steadily from its launch in 2015 and monthly statistics between January and August average just over 2450 sessions a month, despite the blog not being regularly updated at the time. These visits don't all translate in the sharing of information, with only a few visitors adding information to the site. Events, such as an interview with Melanie Swalwell on ABC Radio in July 2015, led to a spike in new visitors and an influx of contributions of individual memories and images. Audiences for the PMA are most densely clustered in Australia, New Zealand, the UK, and North America but the site regularly receives visitors from Europe, Eastern Europe and Russia, with occasional interaction from China, Korea, Singapore, South America and a number of African countries.

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<sup>564</sup> Profiles for games, curators and companies on the PMA were created by Helen Stuckey, Angela Ndalianis and Melanie Swalwell.

<sup>565</sup> Helen Stuckey and others, 'Remembrance of Games Past: The Popular Memory Archive', *Interactive Entertainment 2013* (2013); Helen Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive', *Proceedings of DiGRA 2014: What is Game Studies in Australia?* (DiGRA 2014); Stuckey, Swalwell and Ndalianis.

The PMA's custom-designed database supports a range of perspectives about the profiled games. It is organised into conventional categories of classification: games; creators; companies; platforms; year of release. The data is categorized and tagged to cater for different themes to be discovered and appended.<sup>566</sup> Using the PMA's database, search pathways can be generated for creators, companies, genre, format, platform, countries, and specific years (Figure 22). Exhibitions in the gallery work with spatial narratives that arrange objects, juxtaposing and grouping them, to create relationships and generate stories. In contrast, the PMA's online database provides a series of hypertextual possibilities for building meaningful relationships. It invites visitors to find their own narrative pathways through the information on display using searches, tags and keywords. The blog posts present framing narratives that offer new perspectives through which to explore the collection.<sup>567</sup>

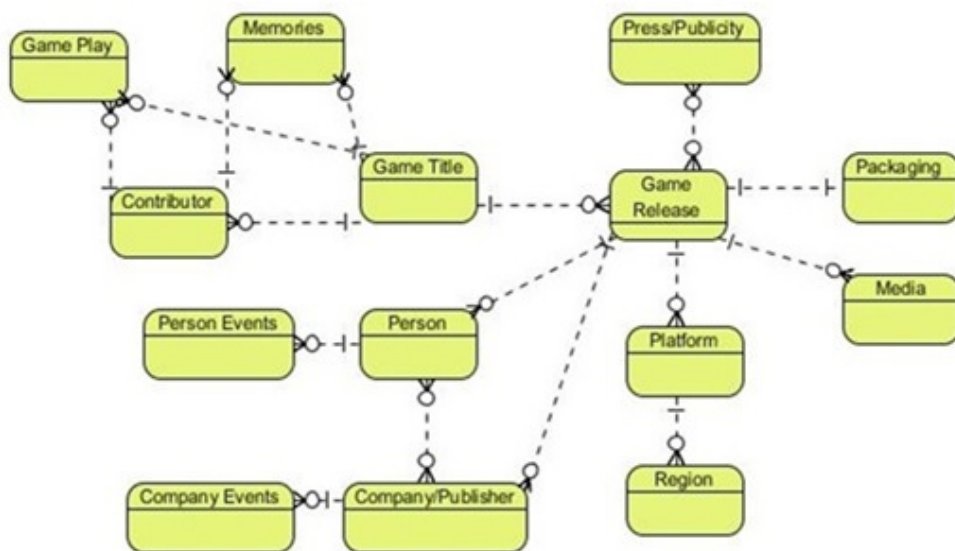


Figure 26: Play it Again Database.<sup>568</sup>

<sup>566</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

<sup>567</sup> Ibid.

<sup>568</sup> Diagram by Denise de Vries. Ibid.

### 7.1.2 The Games

The PMA is a curated online exhibition. It features just over 50 games selected from the 900+ locally written Australasian titles (700+ from Australia and 200+ from New Zealand), identified by Play it Again's research. The selection of games includes commercially and critically successful games that reached global audiences, and also titles by hobbyists that only found small local audiences. In recognition that the culture surrounding the arrival of home computing is intrinsic to how games of the era were designed and played, the PMA's curatorial ambitions focused on the social history of computing of the era rather than presenting a teleological narrative or list of masterworks. Selection criteria addressed important works, creators and companies but also considered other factors. Some of the hobbyist games selected are the youthful creations of the next generation of game developers, whilst others address local hardware such as the Microbee. In addition to games for homegrown hardware, games with Australian content such as *Emu Joust* (R. Sharples and G. Colmer, 1983) were also sought. *Emu Joust*, a clone of the popular arcade game *Joust* (Williams Electronics, 1982), represents the importance of the arcade's legacy in home computing and the ubiquity of clones in early home computer games.

The games of key creatives and companies are featured. Beam Software and Melbourne House are represented by their iconic Horace games for the Spectrum and their big hits, *The Hobbit* (1982) and the *Way of the Exploding Fist* (1985). They are also represented by the design tools *H.U.R.G.* (1984) and *Melbourne Draw* (1983), which speak to the importance of 'making-things' within microcomputing's hobby culture. This selection also profiles the work of key Beam staff such as William Tang, Philip Mitchell, Veronika Megler, Gregg Barnett, composer Neil Brennan, and artists Russel Coomte and Greg Holland. In contrast to the more celebrated games, the inclusion

of *Asterix and the Magic Cauldron* (1986) may seem an odd choice as the game shipped so broken it was actually unwinnable. Whilst this is hardly the stuff of a heroic history, the work offers other important points for discussion of the era including how players endured difficult and buggy games, often assuming that the issues lay with them rather than the game.<sup>569</sup> As a licenced title, *Asterix* is a tribute to Alfred Milgrom's entrepreneurial spirit in seeking out popular content for Beam's games. The title also enables Play it Again to examine issues around preservation strategies for orphan works associated with licenced properties. *Rock'n Wrestle* (1985) is a candidate for 'first wrestling game for the home computer', a worthy contender in any traditional search for origins. Its playable characters are amalgams of leading Wrestling World Federation figures of the eighties and Beam's staff of the time – a double memory trigger. *Aussie Games* (1989) is included as a rare work that tackles Australian content, albeit in a manner that would amuse fans of Bazza McKenzie but not the Australian tourist board.<sup>570</sup>

A later inclusion has been *Penetrator* (Beam Software, 1982) a *Scramble* (Konami, 1981) clone written by Philip Mitchell, with some help from Veronika Megler, for the Spectrum in 1982. Whilst not originally included, *Penetrator* was highlighted in Alison Gazzard's blog post interviewing British designers Steve Clark and Jas Austin. Clark and Austin discuss the game's influence on them. Clark recalls experimenting with the game's level editor<sup>571</sup> and how, in addition to the pleasure of designing his own

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<sup>569</sup> As discussed in chapter 3, *Asterix and the Magic Cauldron's* final build had a software bug that made it impossible to find the last pieces of the puzzle and complete Asterix and Obelix's quest. Despite this somewhat catastrophic flaw, the game was still quite well reviewed and sold well!

<sup>570</sup> The film *The Adventures of Barry McKenzie* written by Bruce Beresford and Barry Humphries was released in 1972, a satire of the worse of Australia's parochialism. It remains a high (or low point) of politically incorrect comedy exploring Australian culture (or lack of it).

<sup>571</sup> Mitchell and Megler wrote the editor when they got tired of calculating bitmaps by hand. They choose to package the editor with the game.

levels, he would 'cheat' and use the editor to make the game's levels easier to complete.<sup>572</sup> In his blog post on Melbourne House's games behind the Iron Curtain, Jaroslav Svelch documents a *Penetrator* clone created by a group of Czech hobbyist programmers for the local Czechoslovak computer, the PMD85.<sup>573</sup> Research also revealed that a licensed conversion of *Penetrator* was released for the Microbee. This rich material triggered the need to revise the original decision not to include *Penetrator*, for as information builds around a work its importance within a collection rises.

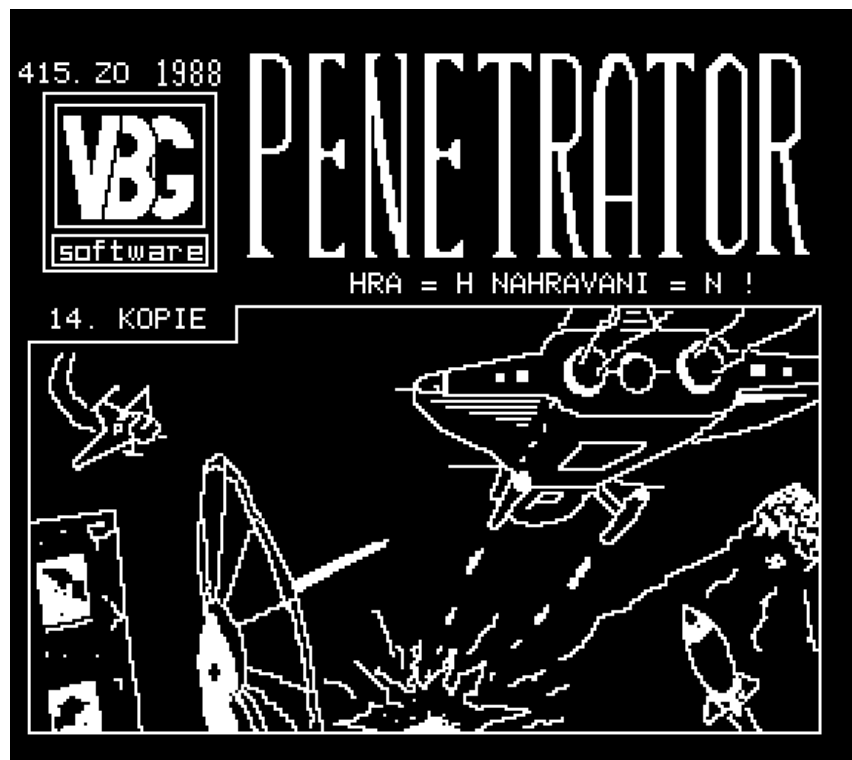


Figure 27: Czech Penetrator Clone, VBG Software (1989)

<sup>572</sup> Alison Gazzard, 'Memories of Melbourne House from British Game Players of the 1980s' (*Play it Again Project*) <<http://playitagainproject.org/memories-of-melbourne-house-from-british-game-players-of-the-1980s/>> accessed 20 May 2015.

<sup>573</sup> Svelch, in discussing the first Czech book on computer gaming, which was written by František Fuka, notes there are many mentions of *Penetrator*. The game itself is not explicitly profiled in Fuka's book, a fact that Svelch attributes to the fact that *Penetrator* was quite an old game at the time of the book's publication in 1988. When interest in the game was, however, revived that year by a group of programmers called VBG software, which included Vlastimil Veselý, Libor Bedřik and Ladislav Gavar, who produced a conversion (or rather, a remake) of *Penetrator* for the Czechoslovak computer PMD 85, a machine that was never sold to individual customers, but became widespread in schools and computer clubs. Jaroslav Svelch, 'From Melbourne House to Czechoslovak Clubs' (*Play it Again: Remembering 1980s gaming*, 2015) <<http://playitagainproject.org/from-melbourne-house-to-czechoslovak-clubs/>> accessed 30 May 2015.

There is not the space here to walk through all the curatorial decisions for the PMA. In this thesis I have discussed the work of Beam Software and Strategic Studies Group (SSG) as historical case studies. The PMA features the games of other Australian companies of the 1980s with international profiles. Micro Forte entered the American market with their sailing simulator, capitalising on Australia's 1983 win at the America Cup, and scored US distribution with a fledgling Electronic Arts. In addition to SSG's strategic wargames, are those of Panther Games, which designed both traditional tabletop wargames and computer games in the 1980s.<sup>574</sup> SSG were also the publishers and producers of Steve Fawcner's influential *Warlords* game, released at the end of 1989. SSG, with their substantial AI and strategy expertise, helped Fawcner refine *Warlords* design. An originator of fantasy strategy and turn-based games for computers, *Warlords* was a huge commercial and critical success with a number of equally popular sequels in the 1990s.

The PMA also examines the youthful hobbyist games of the next generation of Australian designers such as John Passfield (Interactive Binary Illusions, Krome, Pandemic, Right Pedal Studios), and Matthew Hall (Tantalus, Big Ant, KlickTock, Hipster Whale, Mighty Games), who started making games as schoolboys in the 1980s. Also featured are the games of active one-person companies such as Nick Marentes with Supersoft, and Daryl Reynolds with Gameworxs. These 'cottage companies' created games they distributed themselves or successfully marketed through larger publishing and distribution companies. A distinct phenomenon of the micro era, these often highly productive one person

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<sup>574</sup> Micro Forte founders from the 1980s, John De Margeriti and Steven Wang, play central roles in Australian games development industry as does Steve Fawcner. Dave O'Conner from Panther Games went on to work closely on the development of military simulations with the Australian Armed Forces.

developers mostly drifted out of games design at the end of the decade with the changes to hardware and industry.

### 7.1.3 Documenting a History of Use and Interaction

In seeking to understand the cultural significance of videogames in the era of the microcomputer, the PMA seeks to approach game history in terms of a history of use and interaction.<sup>575</sup> It is an approach in keeping with Patricia Galloway's call for the importance of personal knowledge in comprehending personal computing.<sup>576</sup> The need to move away from a history of technology to a history of interactions is also identified by London Science Museum curator, Tilly Blyth. Blyth stresses the need for museums to present technology as a "historical and cultural form, disseminated and appropriated by different users, in different ways in different times". She suggests that curators of technology need to place users, rather than innovators, at the heart of their stories to break down the linear model of technological innovation, and so that audiences understand the role users play in the co-construction of technology.<sup>577</sup>

There was no uniformity to home computing in the 1980s. Microcomputers came in various styles and shapes. They had no consistent hardware and software. What they did share, when they first arrived, was having no established purpose. It was their users who had to define the meaning and significance of the technology. Playing games quickly became established as something to do with micros.<sup>578</sup> The PMA recognises that the

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<sup>575</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

<sup>576</sup> Patricia Galloway, 'Personal Computers, Microhistory, and Shared Authority: Documenting the Inventor – Early Adopter Dialectic' (2011) 33 *IEEE Annals of the History of Computing* 60 <<http://www.computer.org/portal/web/csdl/doi/10.1109/MAHC.2011.45>>.

<sup>577</sup> Tilly Blyth, 'Narratives in the History of Computing: Constructing the Information Age Gallery' in Arthur Tatnall, Tilly Blyth and Roger Johnson (eds), *Making the History of Computing Relevant: IFIP WG 9.7 International Conference, JHC 2013* (Springer Berlin 2013).

<sup>578</sup> Swalwell, 'Questions of Microcomputers' Usefulness in 1980s Australia'; Haddon.



microcomputing game culture in the 1980s was highly participatory and often characterized by a DIY ethic. Through its selected games, blog entries and community contributions, the archive aspires to document a history of games as they have been used and experienced. Hobbyist games are notable by their absence from most videogame history, as are DIY books, published game listings, computer club compilations and games alternatively distributed through local newsletters, swap meets and gaming conferences. Their absence is, in part, due to the idea that they don't belong to the 'real' story of the rise of commercial games. Home coders are frequently dismissed for their lack of any economic value, as 'hobbyists' engaged in "swapping and stealing programs"<sup>579</sup>. It is a position that ignores the creative contribution of the scene.

The PMA aims to address both the development of games and their subsequent uses in the hands of players. It addresses games as experiences – how they come into being through the actions and performances of their players, and how they form part of broader cultures, from clubs to classrooms. Located online, the site is designed to make links with a wider audience, connecting historical research into early games with those who lived and played their way through this period. The exhibition of selected game titles and its accompanying blog act as an invitation to participation from audiences. The site is designed to seek, capture and display people's contributions that document what they did with early computers and games: the games they wrote; the games they played; what these games mean and meant to them; and what significance they attribute to the playing and making of games in this era.<sup>580</sup> The site invites contributors to share not just knowledge of their memories and experiences with 1980s

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<sup>579</sup> Kline, Dyer-Witford and De Peuter. 142

<sup>580</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

games and culture, but also any artefacts in need of preservation that can be digitised and shared on the site, such as images, videos and documentation.<sup>581</sup>

## 7.2 Non-Traditional Archives

Recognising that it is the games community that currently holds most knowledge about the history of videogames, the PMA draws inspiration from databases created by retro gamer fan sites and their approaches for documenting and exhibiting historic games. As discussed in Chapter 6, these sites have created taxonomies for classifying and collecting videogames of the era and established practices to allow individuals to contribute to the archives. Online fan archives reflect how an active user community searches and engages with this material. Built around digitally native content by a digitally literate community, they represent what sites seeking to elicit demotic memories about videogames might look like.

## 7.3 The Significance of Contributions to the PMA

Fan discourse issues from situated knowledge that is based on lived experience. This thesis has argued for the importance of player recollections. Player memories provide insight and understanding about historic games that cannot be communicated from experiencing those games now. The PMA aims to collect memories of play that are absent from most traditional archives. Examples include the importance of the tape loading scream on *The Way of the Exploding Fist*, Beam Software (Melbourne House). Contributions to the PMA responding to a blog post on the iconic scream document information on people's response to the scream, but also where people played the game, who they played with, and even how they

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<sup>581</sup> Software cannot be submitted to the PMA but can be submitted to its sister site The Australasian Heritage Software Database. <http://www.ourdigitalheritage.org/>

played with the game. Many players vividly remember the shock of the loading scream, as Stu 322 recounts:

Looks like I'm not the only one to have been caught out by that fecking scream during the load! <smile>

My mate told me to sit close to the TV (apparently the manual advised this – according to my lying friend). I was sipping a glass of cola and all of a sudden that SCREAAAAAAAAM happened and my cola went everywhere. <smile>

Absolutely loved the game, I was the master of sitting on my bum and leg swiping everyone that came close <wink><sup>582</sup>

Dave Farquar encountered the game at a friend's house. Here he learnt more than just gameplay tricks and left with a copy of the game, reminding us how tape games were commonly pirated and shared amongst friends. He writes:

I remember that scream too. - I got my introduction to the game in 1988 or so. I was at my best friend's house, and he said, "Watch this," then cranked the volume at just the right time and freaked his younger sister out with that sound effect. So of course I asked for a copy, took it home, and did the same thing to my younger sister. Ah, youth.<sup>583</sup>

These memories provide 'context' that is critical for creating an understanding of games for future users and researchers.<sup>584</sup> To audiences today, *The Way of the Exploding Fist's* tape loading scream appears inconsequential, yet it was momentous in its day. Tapes took a long time to load – up to ten minutes. Beam Software was one of the earliest companies

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<sup>582</sup> Comments on Way of the Exploding Fist page on the PMA. /<http://playitagainproject.org/games/the-way-of-the-exploding-fist-c64/>

<sup>583</sup> *ibid.*

<sup>584</sup> McDonough and others.

to create a fast loader, the 'Pavloada', and to devise a way to add sound and animation to the tape load sequence.<sup>585</sup> The scream was a defining part of the original 1985 game release. As previously stated, it can be difficult to appreciate the innovation and achievements of early video games as rapid technological change renders the most sophisticated features of 1980s' games crude to contemporary audiences. An understanding of both the social and material conditions of the consumption and reception of these early games is difficult to collect, preserve and display, however personal memories of gameplay can be evocative, entertaining and capture a strong sense of the era. They provide understandings of what players actually did with games and how they played them.

Steve322 and Dave Farquars' memories represent those of the individual player experience. Megan Winget identifies the need to preserve not just understandings of the player experiences of the designed game "generated through rules, code, and narrative arc", but the importance of the personal experiences of play as engendered through "interactivity, social networking, and game modifications to meet individual or group needs". She argues, "until traditional institutions create collection development models that include artefacts of participatory culture, the institutional representation of game collections runs the risk of being incomplete or even unreliable."<sup>586</sup> Whilst Winget is more specifically discussing mods, machinima and other artefacts of user communities, her statement can be extended to address the broader participatory cultures of games. The PMA offers one such model for collections. The comments of Farquar and Stu232 provide examples of context in which play took place outside the game.

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<sup>585</sup> A later budget version of *Way of the Exploding Fist* published by Mastertronic on their Ricochet label includes a little shooter game you could play as the tape loaded.

<sup>586</sup> Megan A Winget, 'Videogame Preservation and Massively Multiplayer Online Role-Playing Games : A Review of the Literature' (2011) 62 *Journal of the American Society for Information Science* 1869.1880

### 7.3.1 Documenting Game Culture of the 1980s

A record of how and where people played games in the era is captured by images contributed to the PMA. These images offer documentation of domestic computer use, a phenomenon that is poorly represented in conventional archives. They include a black and white image uploaded by Jenny Scott, showing a grandfather and grandchild silhouetted in a living room as they concentrate on playing a generic Pong game on a small television in 1981 (Figure 28). A later image shared by Jenny Scott shows her daughter, Katie, playing a space shooter, a clone of the arcade game *Gyruss*, on a Commodore 64 (Figure 29). Katie is sitting in a lounge chair using a joystick to play, the Commodore 64 with its tape and disc drives is plugged into a television whose aerial betrays its dual purpose. The whole set up appears as an ad hoc intervention in the living room space. Alan Laughton's Christmas 1984/85 image of him and his young daughter playing on a borrowed Tandy CoCo (TRS-80 Colour Computer) connected to the family TV propped up on a fruit box is similarly evocative (Figure 30). A later image of his son playing a *Defender* clone on the home Microbee shows a desk set up with dedicated monitor surrounded by cassettes and other computer related paraphernalia (Figure 31). Other images, such as Chad Habel's, also reveal a dedicated set-up. Chad explains his parents thought computers would be important in the future so wanted their children to grow up surrounded by them. The picture captures a young Chad clutching a joystick, massive in his small hands, totally transfixed by the screen (Figure 32). Over the course of the decade, home computers moved from novelty to find a more permanent place in homes with dedicated monitors, furniture and rooms.



Figure 28: Man playing pong clone with his grandchild, Australia, 1981



Figure 29: Katie Scott playing Commodore 64, Australia, 1985



Figure 30: Alan Laughton and daughter play on a Tandy 'Coco', Christmas 1984



Figure 31: Home-computing Australian style on the Microbee, 1985



Figure 32: Game play on the C64 - a young Chad Habel concentrates

Craig Wilson has shared a wonderful photo of the Melbourne User group for Super 80 machines like the ZX80, TRS80 and Microbee (Figure 33). He celebrates the importance of user groups to the culture of the microcomputer gamer. It was to these groups, he explains, that people came seeking support to learn how to use their machines. Unlike the costly devices that had existing software on the market, part of the challenge of early micros was making content. Wilson suggests that this was a mixed blessing, as it was also a “strength that pushed people ...to do things that we would not believe possible with such devices today”.<sup>587</sup> Describing what it took to create the game that can be seen on the micro's screen in the photograph, he explains:

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<sup>587</sup> Craig Wilson, 'Demo of Star Fighter Game @ Melbourne Super 80 User Meeting' (*Play it Again: Remembering 1980's gaming*, 2015) <<http://playitagainproject.org/contribute/?entry=26238>> accessed 10 November 2015.



In the image you can see what seems like a simple game that you just played. In fact you had to spend months coding it, using audio tapes to store it on. Writing everything from the keyboard routine to the sound and random number generator for stars. It took a good 20+ min to start and load the game.<sup>588</sup>

As proof of what could be achieved with these machines Wilson also shared an early 1990s image of his set up in his suburban Blackburn home for his privately run dial up web site (which he suggests may be one of the earliest in Australia). The dial up site's set up involved him repurposing his 1980s 8bit game machine, complete with cassette drive, to run it. The images and memories shared on the PMA are very informative and evocative of the culture of the local microcomputer gamer.



Figure 33: Melbourne User group for Super 80 machines,

The PMA documents a time when computer games were emerging as distinct cultural artefacts from within the burgeoning culture of home

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<sup>588</sup> Ibid.

computing. In the early 1980s computer games were not well established as commercial products and users of personal computers mostly got their games from typing in listings from magazines or swapping them at software meet-ups. Australian game designer, Matthew Hall, recalls how he wrote a lot of text adventures as a child in the 1980s using a book given to him by his grandfather entitled *Creating Adventures on your Commodore 64*. Locating his childhood games on a set of decaying cassettes, Hall has made his collection (many un-played by anyone but him<sup>589</sup>) available online (Figure 34).



Figure 34; Matthew Hall 1980s Commodore 64 bundle

Matthew Hall's childhood games are not important as individual works, but are interesting for the story they tell. For many people, gaming on microcomputers involved the writing of games as much as the playing. It is in no way a uniquely Australian story, and New Zealander Kevin Philips

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<sup>589</sup> Hall grew up on a remote sheep farm in Victoria. Writing games on the C64 was his hobby but he had no one to play them as his little sister was not interested and the computers at school were Microbees. Matt Hall Interview, 28 August 2015.

recounts how his first foray into programming was via the book 34 *Amazing Games for the 1K ZX81*. On the PMA, Philips shared a video of gameplay from games for the ZX Spectrum that he found on an old cassette. There are games he typed in from magazine listings in the 1980s (Figure 35). Telling the story of these games he recounts:

That's pretty much where and how I think many people (including myself) built their skills in games programming. I recall getting new magazines each week, sitting at home and typing in looooong listings of games to play. Sometimes they were awful, sometimes they were pretty cool... If it was a great game, it got saved. These days, it's funny to think how much time I'd spend typing in a game to just type "NEW" and start a new one... Without saving...<sup>590</sup>

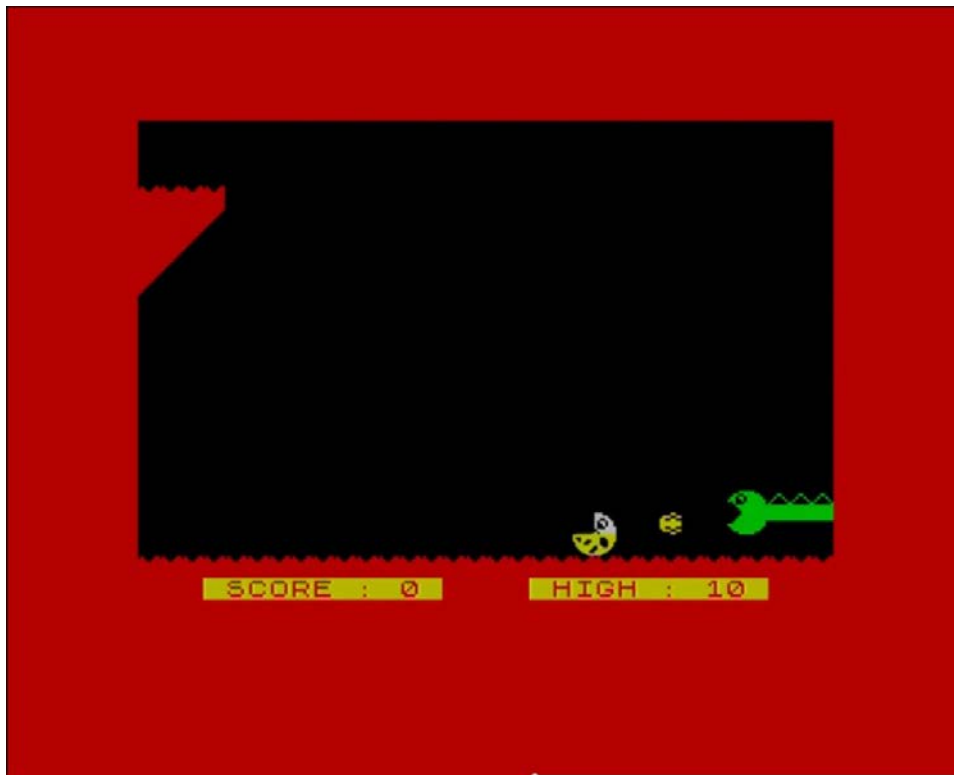


Figure 35: Kevin Philips type-in games of the 1980s – ZX Caveman

<sup>590</sup> Kevin Philips, 'Learning by Example – Typing in Games from Magazines' (*Play it Again: Remembering 1980s gaming*, 2014) <<http://playitagainproject.org/contribute/>> accessed 14 March 2014.

Games created from listings and DIY books are missing from most histories of videogames. They are frequently authorless, often copies of arcade games, and not valued as design.<sup>591</sup> They were, however, many people's first encounter with both games and computing. It was an era when many people cut their programming teeth correcting game listings and debugging game code.<sup>592</sup> New Zealander Carl Muller recalls his uncle sending him two pages torn out of the U.K magazine *Computer and Video Games*, August 1982, featuring an *Asteroids* clone for the Commodore 64 called *Rocks*. He went to the local computer shop and typed it in to the display computer, which crashed, as it did not have enough RAM to run it. Fortunately, he had had the foresight to copy the listing to tape after completing the lengthy data entry. As per the magazine's instructions regarding memory requirements, additional RAM was added to the machine, after which it ran fine. The shop owner (who we can only assume was collaborating in Muller's enterprise), sold a copy to a keen customer on the spot, dubbing a copy from Muller's tape.<sup>593</sup> In 1980s' microcomputing there was more overlap between the identity of designer and that of player.

Australian Nickolas Marentes began making games for fun on the TRS80 that his parents had brought him to "help him with his homework", but he was soon driven by a desire to make commercial grade games (Figure 36). Marentes' description of his games design process, shared on the PMA, explains the limits of the TRS80's processing power, graphic resolution of 128 x 48 pixels, and how to create sounds by toggling the cassette output

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<sup>591</sup> Swalwell, '1980s Home Coding: The Art of Amateur Coding.'

<sup>592</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

<sup>593</sup> Carl Muller, "Part 1: 1980s Home Brew – The Beginnings A Three Part Special Where NZ Designer Carl Muller Shares His Remembrance of Home Coding," *Play It Again: Remembering 1980s Gaming*, 2014, <http://playitagainproject.org/part-1-1980s-home-brew-the-beginnings-a-three-part-special-where-nz-designer-carl-muller-shares-his-remembrance-of-home-coding/>.

port on and off.<sup>594</sup> His narration invites understanding of the machine's constraints but also of the creative challenge of working within them.

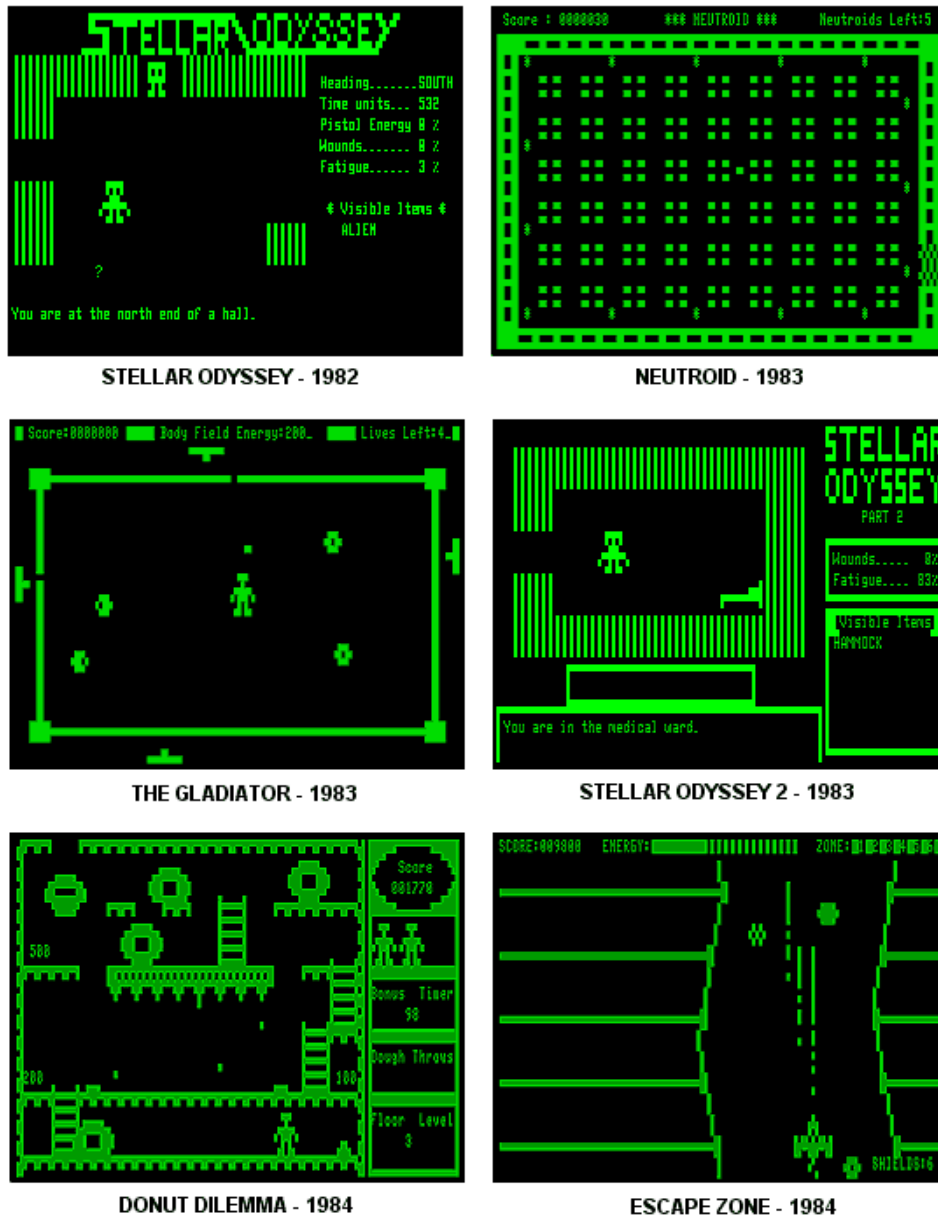


Figure 36: As a school boy Nick Marentes wrote and sold quality games for the TRS80.

Marentes explains that he wrote in assembly language, despite how punishing it could be, enjoying the total mastery of the system it offered.

<sup>594</sup> Nickolas Marentes, 'The Life and Times of an 80's Game Programmer – Putting It All Together' (*Play it Again: Remembering 1980s gaming*, 2013) <<http://playitagainproject.org/the-life-and-times-of-an-80s-game-programmer-putting-it-all-together/>> accessed 8 December 2013.

His practice of writing his code, “routine by routine”, by hand, enabled him to code anytime, even during class, or waiting for his cassette tapes to load. To illustrate his process, he shared images of his original notebooks full of hand-written code, as well as examples of working out the games graphics in pencil on graph paper (Figure 37).

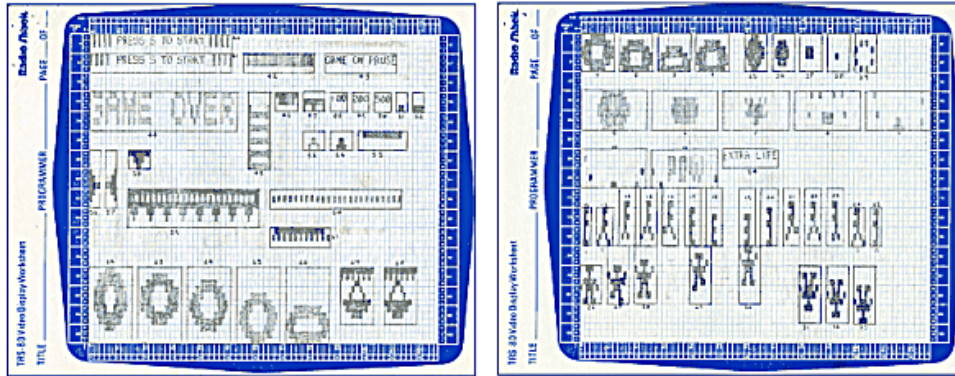


Figure 37: Hand drawn graphics for *Donut Dilemma*

In a comment responding to Marentes’ post, New Zealander Philips offers some of his memories of the joys of machine coding, working with the challenges of screen memory for scrolling games. He goes on to explain the technique he created to enable smooth scrolling without flicker. Philips has shared a PDF of his old 1980s notebooks with their algorithms and concepts for side scrolling solutions on the PMA.<sup>595</sup> Philips’ and Marentes’ contributions to the archive explain the thrill of mastering the hardware’s systems that working in machine code offered micro users. Audiences gain an appreciation of how creating fast code and optimizing memory on your micro was part of the fun of making games. Through sharing their 1980s design documentation, they have created valuable resources for researchers and historians, and ensured the preservation of these personal records that speak to a broader history.

<sup>595</sup> Comments on Ibid.

The collections of remembrances on the PMA also reveal a time before the marketing and sales of videogames for home computers had established models. The archive has collected the memories of professional Australian and New Zealand game developers of how they got started designing games back in the 1980s. How-to-books played an important role in the formative game design experiments of Matthew Hall. Passfield explains how he would try to recreate the games he read about in magazines like *Computer and Video Games*, games that he would like to play but could not purchase anywhere near his home in rural New South Wales.<sup>596</sup> Passfield was still at school when he published his Microbee game *Chilly Willy* (1984). This was a *Pengo* clone he wrote so he could play the game at home for free rather than paying twenty cents a play at the arcade. He posted a copy to the address for Honeysoft he found on a cassette. Honeysoft published it but, as Passfield recounts, it could only be purchased at really small hobby stores or computer shops. In his post Passfield confesses he never told his friends at school about writing games, as he thought it would seem too 'nerdy'. Leon, commenting on Passfield's post admits that, like Passfield, he too concealed from his school friends that he was writing and publishing games for fear it was "far too nerdy".<sup>597</sup>

The comments and conversations between early designers and from others in the community serve a valuable role in fact checking and help unearth further information. An apologetic Leon corrects the RAM size of the Dick Smith VZ200 computer mentioned by Passfield in his text. An exchange with New Zealand designer Mark Sibly to correct a mistake on the site led to the identification of a number of his other games. Sibly had alerted the PMA that the video of '*Dinky Kong*' on the site was not actually

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<sup>596</sup> John Passfield, "My Start in the Games Industry," *Play It Again: Remembering 1980s Gaming*, 2014, <http://playitagainproject.org/my-start-in-the-games-industry/>.

<sup>597</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

of 'his' *Dinky Kong*. The featured video was in fact for an Oric game of the same name. Issues of identification are a common problem for game historians as few of the less commercial games of the era are well known and, like *Dinky Kong*, many are clones and homages.<sup>598</sup> It is a problem compounded by the issues discussed in Chapter 5's analysis of *The Hobbit* in which I describe how the porting of the same game across the individual microcomputers' idiosyncratic systems created significant differences in appearance.

```

PARROT : begin
    If object_location[parrot] = pocket then
        WriteLn('Put it down! It's driving me MAD!')
    else
        WriteLn('It looks like trouble!');
    end;
POLE : WriteLn('It is very strong.');
```

```

SWITCH : WriteLn('You could reach it with your hand.');
```

```

FLARE_GUN : begin
    If flrs <> 1 then
        WriteLn('You have ',flrs,' flares left.')
```

```

    else
        WriteLn('You have one flare left.');
```

```

    end;
GROUND_HOLE : WriteLn('At the bottom, a small passage veers off.');
```

```

AXE : WriteLn('It looks very sharp!');
```

```

WELL : WriteLn('You can see a handle attached to the well.');
```

```

BUCKET : If bucket_bool then
    WriteLn('It is full of water.')
```

```

    else
        WriteLn('It is empty.');
```

```

SLEEPING_GUARD : WriteLn('She has a smile on her face.');
```

```

WOOD : WriteLn('It has been freshly cut.');
```

```

SHELL : begin
    WriteLn('It has some writing inside.');
```

```

    WriteLn('It says :');
```

```

    WriteLn('        PROPERTY OF KING NEPTUNE.');
```

```

    WriteLn(' If found, please take to nearest bay and give');
```

```

    WriteLn('a good blow. Reward for return.');
```

```

    end;

```

Figure 38: Matthew Hall's schoolboy text adventure *Jewels on Sancara*, survived as a 32 page Turbo Pascal listing, Detail from Command 5

<sup>598</sup> Ibid.



The contributions made by the PMA's community include hands-on preservation. Matthew Hall's text adventure *Jewels of Sancara Island* (1988) was written on his school's Microbee. The schoolboy Hall had printed out the 32 page Turbo Pascal listing on the school's dot matrix printer, much to his teacher's horror at the waste of paper (Figure 37), and it had languished in a drawer for the last thirty or so years. Alan Laughton from the Microbee Software Preservation Project encountered the JPGs of the listing on the PMA. Laughton OCRed<sup>599</sup> the listing and corrected the errors that crept in during the process, even fixing code to recover the game's sound. *Jewels of Sancara Island*, compiled for the Microbee, can now be downloaded and played.<sup>600</sup>

## 7. 4 Online Audiences

The arrival of Web 2.0 provided new opportunities for museums to engage audiences with their collections.<sup>601</sup> The most prevalent tactics have been to provide online access to catalogues of digital images of collection objects, curated blogs, and the use of social media such as Facebook, Flickr, Instagram and Twitter to engage with audiences.<sup>602</sup> Some museums have experimented with engaging videogame communities online. The Smithsonian, in the lead up to their 2012 exhibition *The Art of Videogames*, invited online audiences to engage in the exhibition's curatorial process. Participants were asked to select their videogame preferences from a short-

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<sup>599</sup> Optical character recognition (OCR) is the electronic conversion of images of text into machine-encoded text.

<sup>600</sup> Ibid.

<sup>601</sup> The term Web2.0 has been used to define the shift of the web toward open communication, decentralisation of authority, user generated content and architectures of participation. Considered a social phenomenon, it is not linked to any particular technologies but is often coupled in museum discourse with social networking softwares and the ability to share high quality graphic and audio content.

<sup>602</sup> Angelina Russo and others, 'Participatory Communication with Social Media' (2008) 51 *Curator The Museum Journal* 21; Nina Simon, 'Discourse in the Blogosphere: What Museums Can Learn from Web 2.0' (2007) 2 *Museums Social Issues* 257 <[http://www.museumtwo.com/publications/MSI\\_257-274\\_simon.pdf](http://www.museumtwo.com/publications/MSI_257-274_simon.pdf)>; Cèsar Carreras and F Mancini, 'Techno-Society at the Service of Memory Institutions: Web 2.0 in Museums' (2010) 2 *Catalan Journal of Communication Cultural Studies* 59; Lynda Kelly, 'How Web 2.0 Is Changing the Nature of Museum Work' (2010) 53 *Curator The Museum Journal* 405.

list, organised by platform and genre, prepared by the curatorial team.<sup>603</sup> The call out to community was an inspired piece of marketing that reached out to core audiences and told them that their knowledge and opinions were important to the cultural institution. The technique, however, constrained curatorial narrative and decisions. Curation by popular vote led to an exhibition dominated by the 'usual suspects'. It can be interpreted as an exercise in reductive classification, effectively shutting down possibilities for meaning and preventing the curatorial team using the selection to question and explore assumptions about videogames.<sup>604</sup> *The Art of Videogames'* curatorial premise is directly aligned with hardware development and graphics evolution, championing the dominant commercial narrative of technological advancement. The exhibition's web site proclaims, "The focus [of this exhibition] was on visual effects, the usage of new creative technologies and the most influential artists and designers".<sup>605</sup> It can be argued, however, that the selected games more closely resemble a "top hits" selection based on popularity, rather than an exploration focused particularly on games' graphics. The populist approach appears to have sacrificed more critical narratives about the art and science of videogame's graphical effects, and indeed other perspectives on games such as their art and culture, for a gesture of collaboration with community.<sup>606</sup>

The *100 Toys* (2012) project at the Indianapolis Museum of Childhood is a more considered approach to working with online audiences. Selecting 100

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<sup>603</sup> Smithsonian American Art Museum, 'The Art of Video Games Exhibition Checklist' <<http://americanart.si.edu/exhibitions/archive/2012/games/winninggames.pdf>>.

<sup>604</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

<sup>605</sup> Smithsonian American Art Museum, 'Art of Videogames' ([artofvideogames.org](http://www.artofvideogames.org)) <<http://www.artofvideogames.org/>> accessed 7 June 2013.

<sup>606</sup> A call out addressing the story of games' graphics through technical and aesthetic design choices, rather than popular games, would have featured a list of different and less well known titles. For this call out a far smaller more niche and knowledgeable group of game fans would have qualified to contribute.

toys from their collection, they invited online audiences to vote on the toys that “defined childhood”. Voters were also asked to share their memories of the toys that defined *their* childhood. The museum received 24,000 votes and 600 stories on their site.<sup>607</sup> The information they received not only enriched knowledge about collection objects, but the museum used the results to engage the audience in further discussion. The curator’s “top 20” list was compared to the crowd-sourced “top 20” revealing a 70% overlap between the curator’s choice and the crowd’s. This observation served to make the six different toys on each list a focus for further questions and reflection.<sup>608</sup>

The online space offers new opportunities for the Museum to engage with its audiences and to rethink its approach to exhibition curation. In 2001, the Museum of Modern Art (MoMA) Deputy Director Patterson Sims stated the importance of seeing the web not as “a lure for the museum” but rather as existing as a “parallel museum”.<sup>609</sup> At this time MoMA was already receiving more visits to their site than their building. MoMA’s recent “curatorial experiment”, the *Design and Violence* online exhibition <http://designandviolence.moma.org/> (2013-2015), explored the concept of a “parallel museum”.

*Design and Violence* was an exclusively online exhibition that interrogated the polite assumption, perpetuated by museums, that good design is benign and aesthetically pleasing.<sup>610</sup> Discursive in structure, the exhibition

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<sup>607</sup> ‘100 Toys That Define Our Childhood’ (*The Children’s Museum of Indianapolis*, 2012) <<http://thehistory.childrensmuseum.org/exhibits/100-toys>> accessed 14 April 2014.

<sup>608</sup> Stuckey and others, ‘Remembering & Exhibiting Games Past: The Popular Memory Archive.’

<sup>609</sup> Quoted in Graham and Cook p.179 Beryl Graham and Sarah Cook, *Rethinking Curating: Art after New Media* (MIT Press 2012). Patterson Sims is the Deputy Director for Education at MoMA, New York.

<sup>610</sup> Anthony Burke, ‘Paola Antonelli Interview: “Design Has Been Misconstrued as Decoration”’ (*The Conversation*, 2013) <<http://theconversation.com/paola-antonelli-interview-design-has-been-misconstrued-as-decoration-21148>>.

episodically profiled a series of design works exploring the theme of violence. Each object was presented with a short essay by an invited expert, whose text included a provocation, inviting response.<sup>611</sup> The subsequent discussions by visitors to the site formed part of the exhibition. These discussions present contested understandings of both the object and the curatorial concepts. Curators Paola Antonelli and James Hunt envisaged the exhibition as a conversation with the public, an exchange of information where the museum would also learn. Being online freed them to address work beyond MoMA's collection and engage with design that cannot be collected and displayed in a conventional sense: from cattle runs for slaughterhouses to synthetic viruses.<sup>612</sup> Whilst *Design and Violence* has a strong curatorial narrative, it was not simplistically didactic but is genuinely inclusive in its approach.<sup>613</sup>

#### 7.4.1 Moving Beyond the Object Focus

Online has the potential to combine scholarly interpretation with more fluid and inclusive structures that can facilitate the creation of multiple narratives around collections.<sup>614</sup> The PMA already entails a shift beyond the Museum's traditional object focus. The content's hypertextual relationships support the potential of multiple narrative readings. For example, Beam Software's *The Hobbit* can be contextualized through a multitude of associations. These include: Beam's other games; text adventures; the platforms it played on; adventure clubs; games made in

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<sup>611</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

<sup>612</sup> The site also allows them to show work that does not sit comfortably with MoMA's collection policy and governance. Antonelli has previously spoken about MoMA's refusal to let her collect a Beretta for the Design Collection and its concern about collecting violent videogames. Antonelli, 'Paola Antonelli: Why I Brought Pac-Man to MoMA.'

<sup>613</sup> Paola Antonelli, 'Paola Antonelli: Design and Violence', *Eyeo Festival 2013* (Eyeo Festival // INST-INT 2013) <<https://vimeo.com/75599754>>.

<sup>614</sup> Fiona Cameron and Helena Robinson, 'Digital Knowledgescapes: Cultural, Theoretical, Practical, and Usage Issues Facing Museum Collection Databases in a Digital Epoch' in Fiona Cameron and Sarah Kenderine (eds), *Theorizing Digital Cultural Heritage* (MIT Press 2010); Jennifer Trant, 'When All You've Got Is "The Real Thing": Museums and Authenticity in the Networked World.' in Ross Parry (ed), *Museums in a Digital Age* (Routledge 2010).

1982; as well as the specific stories of its production and reception.<sup>615</sup> These ‘stories’ are presented in a variety of voices; scholars, designers, players, and fans. In this mix, the passion and intimacy of the retro gamer and fan presents a sense of the lived experience of the games and their importance to individuals. The impact of the emotive language of ‘real’ people is a factor identified by Ben Gammon and Xerxes Mazda in their examination of “Discussion Exhibitions” at the London Science Museum. One compelling reason people read the comments of others, they explain, is that the emotive language of visitor’s comments is more compelling than display didactics.<sup>616</sup> Oral histories, even fragments thereof, provide a nuanced and embodied relationship with the work. In discussing the curation of London Science Museum’s “Information Age” Gallery, Tilly Blyth promotes the ability of personal stories to help audiences to picture another time and place, enabling them to imagine the “motivations of individuals and the constraints that they were under”.<sup>617</sup>

The PMA is designed to host play-in-the-browser games, a feature that the Play it Again team is currently working toward. Games hosted in the browser are a feature of World of Spectrum (WOS), where they are located amongst the other archived resources. On the PMA, playable games will be situated within the surrounding narrative discussion and associated material. These resources include developer interviews, game reviews, gameplay videos and walkthroughs. These provide insight on how to play, but also situate the work in a media ecology that speaks to the era of games culture. Player-made materials such as walkthroughs and video playthroughs ideally will operate both as tutorials to explain play, and

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<sup>615</sup> Stuckey and others, ‘Remembering & Exhibiting Games Past: The Popular Memory Archive.’

<sup>616</sup> Ben Gammon and Xerxes Mazda, ‘The Power of the Pencil Renegotiating the Museum Visitor Relationship’ [2009] Exhibitionist 26.

<sup>617</sup> Blyth. 29

present examples of the game as played by an experienced or skilled player. Player comments will also help define a game's original appeal for today's audiences. Whilst the pleasures of play may not transcend the historic gap, encountering the game in this context will act as a provocation to a greater awareness of the history of game design rather than a dismissal of the game.<sup>618</sup> Ideally, the ease of accessing play-in-the-browser games will attract visitors to the site and inspire more original players to share their memories, building richer understandings of these works and the cultures in which they were created and played.<sup>619</sup>

There are known issues with play-in-the-browser games, as the user experience cannot be monitored. A user experience may be impaired by not having the correct peripherals, such as a joystick, and there is an obvious distinction between the browser-emulated experience and that of the original platform. There are, however, less performative concerns for audiences playing videogames online compared to in the gallery. These include no time constraints, no performance anxiety, and more opportunities for experimentation.<sup>620</sup> In addition, research has shown that most audiences do not wish to engage with historic hardware and are happy to play emulated games where the interfaces are more familiar.<sup>621</sup> I propose that the PMA's play-in-the-browser games actually reflect how games as media are now consumed. Videogame play is now enmeshed in

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<sup>618</sup> Stuckey and others, 'What Retrogamers Can Teach the Museum.'

<sup>619</sup> In addition to play-in-the-browser games is the proposal to create an opportunity to type game listings into an emulated Microbee in the browser. Users can type in a set of original listings with the possibilities of tinkering with the code and learning more about how the micro performs. As a curatorial exercise it would be more engaging to have a number of different microcomputers emulated working with listings for clones of the same arcade game allowing audiences to get a hands-on feel for differing constraints, graphics, audio and behaviours of differing micro systems.

<sup>620</sup> There are other issues, however, one of the preeminent ones being the use of joysticks to play many games of this era. Whilst the joystick can be mapped to the keyboard, it is a very different experience. Most emulated games list if they need a joystick or recommend their use. The site could recommend the use of a joystick and link to museum shop sales for one that has been tested and calibrated with the games that could be ordered online or even borrowed from a library or resource at the museum.

<sup>621</sup> Hedstrom and others.

online player cultures. Players purchase and play games on Steam. They watch gameplay videos of Lets Plays on YouTube, Twitch TV, Everplay, etc., both as entertainment and to improve their gameplay. Online forums, walkthroughs and strategy guides are created and consulted by players to help them meet gameplay challenges and extract the maximum amount of engagement from the content on offer. Players share their thoughts on what they enjoyed, what defined the game for them, and how they played with the game. These comments form part of the material that contemporary players absorb to inform their relationship with new games. It is anticipated that reflecting the protocols of contemporary games consumption may assist new audiences to engage with historical work in a more meaningful way.<sup>622</sup>

### 7.5 Discussion

In the planning stage of a project it is always tempting to envisage an ideal response. There are a number of patterns that were observable in the response to the PMA. One of the key issues that had not been foreseen was that, in dispersing messages on the PMA stories and blogs across various forms of social media, this also served to disperse the responses. People responded where they found the information, be it the IGDA Melbourne Chapter's Facebook page or on Twitter. Despite a healthy working relationship with Lemon 64, any post on their forums led to a generous discussion located on their forums rather than this rich material being captured by the PMA. There is no simple answer to this phenomenon. The curator may wish to attempt to track and record information from all these diverse locations and even link, cite or transpose particularly interesting material, but these issues raise further questions of copyright and digital preservation.

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<sup>622</sup> Stuckey and others, 'What Retrogamers Can Teach the Museum.'

Information is not just being lost outside the site. The PMA needs a better internal search capacity, and improvements to its tagging, linking and metadata to fulfil the potential of mapping narrative pathways and thematic investigations through internal searches.<sup>623</sup> These are issues that could be addressed through the site design, as could the inclusion of simple interactions such as “like” to allow for other kinds of participation and social reinforcement for sharing on the site.<sup>624</sup> The PMA site design would also benefit from a design that highlights the aesthetics of screenshots and box art, allowing for larger images and galleries of images. Image galleries would create more opportunities for visual comparison and juxtaposition, as well as the capacity to more fully appreciate the achievements of the 8bit graphics. In addition, the videogames’ sound design is neglected on the site and could be brought more to the fore with better design and curation.

The PMA is a ‘proof of concept’ project and was realised with a tiny design budget. The initial build of the site used whatever resources could be identified for the games. As Play it Again’s work progresses, hardcopies of the selected games and associated ephemera have been collected and better quality images and scans have replaced many of the original resources. Ideally a museum standard of images, scans and video would be used throughout. Some of the material, however, is quite obscure and a poor quality trace is better than nothing at all. The site is built around Wordpress, which creates some constraints to the design.<sup>625</sup> One of the

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<sup>623</sup> At the time of editing (November 2015), in-site searches are not functioning properly on the PMA, nor are the auto notification to contributors when someone responds to their contribution or a discussion they are part of. Evidence that it is not just fan sites that suffer from issues of maintenance and upkeep.

<sup>624</sup> These were part of the brief but did not make it in to the final design.

<sup>625</sup> Many museums now use Wordpress as their principal web Content/Collection Management System. These include the Smithsonian Institution, Museum of Contemporary Art Chicago, the Santa Cruz Museum of Art and History, and the Clyfford Still Museum.<sup>626</sup> Mia Ridge, ‘Crowdsourcing Our Cultural Heritage: Introduction’ in Mia Ridge (ed), *Crowdsourcing our Cultural Heritage* (Ashgate 2014); Nancy Proctor, ‘Crowdsourcing-an Introduction: From Public Goods to Public Good’ (2013) 56 Curator: The Museum Journal 105 <<http://doi.wiley.com/10.1111/cura.12010>>; Laura Carletti and others, ‘Digital Humanities and Crowdsourcing: An



advantages of WordPress is that its contents appear in Google searches whereas proprietary collections databases often do not.

A critical observation is that many of the more substantive contributions for the site were through relationships cultivated by the curatorial team. On commencing this project, I read extensively into crowdsourcing by museums as a means to both engage audiences and refine information about their collections. Crowdsourcing generally refers to outsourcing to online communities a set of tasks that enrich digital collections. These are often comparatively limited tasks such as checking transcriptions and OCR'd texts, and activities that also improve access, and help museums understand their collections in new ways, such as tagging and folksonomies. Some theorists like to distinguish between these more mechanical tasks and those that represent more user-generated content, where contributors are invited to have their say.<sup>626</sup> There is also a tendency to claim any initiative where users contribute to archives as crowdsourcing.<sup>627</sup>

The PMA does not actually follow the model of crowdsourcing to generate its content but rather reflects the more open and discursive relationship audiences are looking for in the network age. The site attracts

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Exploration', *MW2013: Museums and the Web 2013* (2013); Laurajane Smith, 'Heritage and Social Media: Understanding Heritage in a Participatory Culture' (2013) 56 Curator The Museum Journal 461; Jennifer Trant and Bruce Wyman, 'Investigating Social Tagging and Folksonomy in Art Museums with Steve.museum', *Collaborative Web Tagging Workshop at WWW2006* (2006); JT Wittenauer, S Grabill and K Pigg, 'Take Two: A Study of the Co-Creation of Knowledge on Museum 2.0 Sites' (2009) 2009 Museums and the Web 2009 Proceedings Toronto Archives Museum Informatics.

<sup>626</sup> Mia Ridge, 'Crowdsourcing Our Cultural Heritage: Introduction' in Mia Ridge (ed), *Crowdsourcing our Cultural Heritage* (Ashgate 2014); Nancy Proctor, 'Crowdsourcing-an Introduction: From Public Goods to Public Good' (2013) 56 Curator: The Museum Journal 105 <<http://doi.wiley.com/10.1111/cura.12010>>; Laura Carletti and others, 'Digital Humanities and Crowdsourcing: An Exploration', *MW2013: Museums and the Web 2013* (2013); Laurajane Smith, 'Heritage and Social Media: Understanding Heritage in a Participatory Culture' (2013) 56 Curator The Museum Journal 461; Jennifer Trant and Bruce Wyman, 'Investigating Social Tagging and Folksonomy in Art Museums with Steve.museum', *Collaborative Web Tagging Workshop at WWW2006* (2006); JT Wittenauer, S Grabill and K Pigg, 'Take Two: A Study of the Co-Creation of Knowledge on Museum 2.0 Sites' (2009) 2009 Museums and the Web 2009 Proceedings Toronto Archives Museum Informatics.

<sup>627</sup> A Eveleigh, 'Crowding out the Archivist? Locating Crowdsourcing within the Broader Landscape of Participatory Archives' in Mia Ridge (ed), *Crowdsourcing our cultural heritage* (Ashgate 2104).

knowledgeable contributors who perhaps would not have been found through traditional research methods. It allows other users, who stumble upon it or seek it out, to share their memories and artefacts of the era, enriching the project, enhancing knowledge about the collection, and adding to the collection. Many of those who have contributed to the site resemble a traditional collection of collaborators and experts consulted through the curatorial process. This in no way distracts from the value of those contributions sourced from the 'crowd'. The online site is very discursive and inclusive, presenting multiple voices and positions. Rather than reflecting the practices of crowdsourcing, it addresses Nancy Proctor's call to rethink curating: that now, the curator's job is to draw together interesting voices to interpret and stimulate curiosity, to help audiences navigate ideas. She proposes the curator in the digital age should act as a moderator and facilitator of conversations and shared investigations into the collection.<sup>628</sup> The PMA's open and inclusive model draws on traditional curatorial relationships with professionals and amateur experts, engaging them, as Proctor suggests, in a dialogue with the collection of historical videogames.

The PMA's ambitions do not simply synch with the existing structures of retro game communities. The specific collection policies and curatorial ambitions of museums rarely accord with the completionist aims of most retro game fan sites. In general, online retro game communities identify around specific platforms or particular game franchises. Australia's microcomputing game culture of the 1980s is dispersed across these interests.<sup>629</sup> There is a significant Australian presence on World of

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<sup>628</sup> Proctor, 'Digital: Museum as Platform, Curator as Champion, in the Age of Social Media.'

<sup>629</sup> Australia's story is not as dramatically shaped by the social and political conditions as the gaming subcultures in countries behind the Iron Curtain like Czechoslovak and Poland (and even New Zealand, too, with their restrictive import laws).

Spectrum and Lemon64, both in the profiles of Australian games such as those of Beam Software but also in the nationality of contributing members of the community. The PMA has sourced material extensively from these retro game communities. Fan created archives are the only place most of these games have been documented, a fact acknowledged by Raiford Guins in his recognition of fan archives' importance to researchers.<sup>630</sup> The potential exists for museums to have a more direct relationship to these resources. The Internet Archive, for example, builds collections of materials based on fan sites such as the C64 gameplay collection drawn from Klinksieks' C64 Longplay site. The preservation of fan archives is a question for further research. I suggest also that further work needs to be done to investigate how museum collections online could best work with these sites. Could the Museum adopt methods such as World of Spectrum use, where data is drawn directly from other databases? This would focus the preservation energies of diverse communities to help build the content of curated collections specific to the collections policies of discrete institutions and exhibitions.

Museums need to be engaged with collaborative approaches to sharing information. Museum culture is looking at a future where local institutions will share responsibilities, each addressing areas aligned with their skills and collection policies. For example the Melbourne Museum, which has expertise in plastics and computing conservation, could continue to collect microcomputing hardware and copies of boxed games of the 1980s, whilst ACMI could work more closely with issues of emulation and maintaining access to 1980s videogames as experiences of moving image culture.

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<sup>630</sup> Guins.

## 7.6 In Summary

As discussed, the next step for the Popular Memory Archive is to incorporate versions of games to play in the browser. This creates challenges, both technical and legal. It also raises questions of authenticity. There is no doubt that some game aficionados are extraordinarily committed to the gaming experiences they have had in the past, to the extent that their motivations and concerns may not sit easily with the more critical concerns of game historians and curators.<sup>631</sup> Swalwell has written of some 'game lovers' refusal to recognise the realities of needing to display games in ways that differ from their original presentation. Some consider any departures 'inauthentic', a position that, Swalwell argues, is based upon the common sense notion that history is about 'the way it really was'.<sup>632</sup> Rather than understanding 1980s games as an archaeological and static object that exists only in the past, the PMA considers how these dynamic forms from the past continue to inflect game culture through memory.<sup>633</sup> Memory is understood as a collective, social, and oral phenomenon that encourages "a history from below".

In the context of the museum, Jennifer Gabrys argues, we no longer activate memory through a direct relationship with the Museum's display of objects in the gallery, but increasingly through encounters with the transmission of electronic information, a process that makes them not only less "solid" but less permanent. She explains, "In order for objects to remain as active elements within memory, they need to be activated and recalled continuously and migrated across platforms. The longevity of electronic archives depends on prolonging this condition of impermanence

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<sup>631</sup> Swalwell, 'Moving on from the Original Experience: Games History, Preservation and Presentation.'

<sup>632</sup> Ibid.

<sup>633</sup> Stuckey and others, 'Remembering & Exhibiting Games Past: The Popular Memory Archive.'

through the permanent act of transfer".<sup>634</sup> Whilst Gabrys is describing the increasing role that sharing information of collections online plays in how audiences encounter museum objects, it also evokes the practices of retro gaming where games are transferred to new platforms through emulation, recirculated, and reimagined. This vision presents a different proposition to the fixity of material conservation practice within the museum, instead presenting one designed to address the immaterial nature of the digital artefact.

Museums online are not about the "real thing", a collection of original objects, but about "the right stuff", argues Jennifer Trant.<sup>635</sup> The play-in-the-browser games address the reality that the opportunity to play 1980s videogames on their original hardware will be inevitably lost. The PMA also reflects that the playability of a videogame is not just a technical issue, but one of period-based understandings of gameplay. Whilst the artefacts on the PMA may not be considered authentic, the voices are. To connect with audiences online, argues Trant, museums need to move beyond systems and hierarchies focused on authentic collection objects to propose new interpretative structures "that communicate the magic of the material past to a generation comfortable in the immaterial world".<sup>636</sup>

Games displayed on the PMA are situated amongst stories of their production, reception and the culture of the era. The rationale is that playing a game located within the PMA's web of information could offer a more meaningful encounter with historical games than traditional gallery display. Divorced from their historic hardware, audiences should not

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<sup>634</sup> Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics* (The University of Michigan Press 2011).122.

<sup>635</sup> Trant.311

<sup>636</sup> Ibid.311

expect them to offer identical experiences to those they presented in the 1980s. Rather they become part of what net.art preservationist Anne Laforet describes as “an archaeological assembly of fragments”, allowing audiences to imagine a “plausible state of what the original situation could have been”<sup>637</sup> The PMA presents a case that proposes how museums might blend the voices of game designers, players and retro-computing hobbyists with those of the historian and museum professional to produce a richer understanding of videogames from this era.<sup>638</sup>

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<sup>637</sup> A Laforet, ‘Preservation for Net Art in Museums’ in Anna Bentkowska-Kafel, Trish Cashen and Hazel Gardiner (eds), *Digital Visual Culture: Theory and Practice* (Intellect Books 2007).

<sup>638</sup> Stuckey and others, ‘Remembering & Exhibiting Games Past: The Popular Memory Archive.’

## Chapter 8

## Conclusion

## 8.1. Exhibiting Videogames

This thesis presents an alternative account to most scholarship on videogame history and preservation by placing exhibition curation, with its emphasis on access and audiences, central to its investigation. The thesis research was structured by two complementary inquiries. Firstly the task of the curation of a local history of Australian games for the era of the microcomputer and, secondly, how museums can learn from and work with online retro game communities in documenting and displaying the history of videogames. In keeping with the obligation of museums to preserve national heritage, I have discussed the curation of a local history of Australian videogames from the 1980s. The study of a local history also provides a method for interrogating the existing master narratives of videogame history with their centrist approach and reliance on chronicles, lists of 'firsts' and 'bests', and overriding teleological structure. In addition, the focus on videogames as activities requires a method of history and exhibition that addresses games 'as played'.

This thesis has made original contributions to three overlapping areas of importance to the preservation and exhibition of videogame history. Firstly, I have argued for the recognition of how the design of retro gamer sites reflects the challenges of collecting and displaying games. This identifies the potential of collaborating with audiences online, in order to generate new knowledge about this era of game history. Retro gaming communities have been acknowledged for their pioneering work with software preservation and emulation. The valuable information their resources offer researchers has been recognised by Guins, Kraus, Lowood and others. Extending this precedent, I argue that the practices of retro gamers online can assist curators and archivists in the design of game collections and displays. I have examined retro gamer sites for the insight they may provide for the curation and collecting of videogames. Of central



importance is what these sites reveal about the potential of collaborating with audiences online to capture their experiences with games. In particular, my investigation has focused on the value of the recollections of those who played their way through this era in order to document historical games as activities: how player memories can represent the capacity of videogames to offer different experiences to their players; and how these memories can communicate understandings of playing microcomputer games in the 1980s. In addressing how the exhibition of historical games can connect with audiences, player memories are significant for their evocative nature and diversity.

Secondly, I have shed light on a rich, local Australian history of videogame production and culture. This thesis has demonstrated the critical potential of local history through the case studies of Beam Software, SSG's *Run5* and discussion of *The Hobbit*. The case studies of Beam Software and SSG reveal that highlighting the local does not ignore the global narrative of videogame history because, as I have shown, the national/local and global are intertwined.

Finally, the theoretical insights of this emancipatory historiography, the case studies of local Australian game history, and the curatorial lessons of the selected retro gamer sites have been brought together through the case study of the PMA to argue for their practical application in museum curation and exhibition. The PMA provides an example of how museums might work with fans and retro gamer communities on the preservation of videogames.

### 8.2 Australian Game History of the 1980s

In commencing a history of Australian videogames of the 1980s, this thesis has offered insight into writing a local history of videogames.

Drawing on a mix of conventional and non-traditional sources, investigations of Beam Software and SSG have addressed local and international issues affecting the production and consumption of games of the era, revealing the distinct form and function of local history as critical historiography.

The case study of Beam Software/Melbourne House discussed how games were transformed from being 'something to do on one's microcomputer' to an industry. I considered the significance of the companies' Australian identity and how it shaped their creative opportunities. The study concluded with a dual reading that revealed Beam Software's historical status at the end of the decade as both triumphant and diminished. The second historical case study examined how SSG's magazine *Run5* assisted strategic wargamers to adopt the microcomputer as a platform. The study exposed the differing trajectory of the adaptation of manual wargames to home computing, as compared to the influence of the arcades or the labs. Central to this was the important role that SSG's 'moddable' game systems provided for the co-creation of content by players, a concept generally associated with a much later period in game history. The two cases provide examples of how particular historical contexts framed the establishment of the local industry and informed gaming cultures.

These studies are rooted in an approach Suominen characterises as 'emancipatory histories' with their focus on challenging orthodoxy and raising debate.<sup>639</sup> They are not presented as a simple dichotomy between the historical centre of game history and the periphery, but examine

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<sup>639</sup> Suominen, 'How to Present the History of Digital Games.'

Australian games within broader cultural reference points. As part of the process of researching recent history, I identified methods available to the historian, including oral history and archival studies of paratextual materials, and considered the significance of online fan archives. I reflected on the kinds of histories we can construct from the resources available, on what gets represented and what gets left out.

Rather than the construction of a discrete history of videogames built on attempts to define videogames' distinct ludic characteristics, my approach aligned with the positions of Guins, Lowood, Swalwell, Wilson and others who recognise the need to contextualise videogames in relation to broader issues of their historical periods. This includes their particular archaeologies of participation and their relationship to other media and cultural forms. The research reclaimed Melbourne House's DIY computing books as representing the lively culture of hobbyist game design of the era rather than dismissing them as merely the precursors to the 'real business' of videogames development. The importance of hobbyist games of the 1980s in Australia and their centrality to how videogames were experienced in the era are further explored in the personal contributions and developer stories on the PMA. The case studies of Beam Software and SSG showed that representing local game history requires more than just a selection of 'hits of the 80s'.

The case study of collecting and displaying *The Hobbit*, the examination of Lemon64 and World of Spectrum, and the discussion of the PMA addressed the challenges of documenting and displaying this history of use and experience. The inclusion of hobbyists' games and examples of games created from listings on the PMA demonstrated ways to exhibit DIY and hobbyist culture side-by-side with the successful commercial games of the era. The inclusion of hobbyist game design allowed for a more

representative study of the period. The stories and memories collected reveal that on some platforms there was little distinction between hobbyist games and commercial games. For many users, the pleasures of videogames during the 1980s were defined as much by making games as playing them.

### 8.3 Collecting Player Memories

The manner in which historical games are collected will determine how they can be understood in the future. In recognition that playable software, whilst valuable, does not necessarily provide audiences with the most meaningful encounter with old games, my research has built on the work of Newman and Lowood, to argue for the value of player-made artefacts to record the complexity of videogames as played.<sup>640</sup> In addition to capturing player performance, I argued for the importance of collecting player memories to document games as experience. This idea was established through the discussion of exhibiting *The Hobbit*, the examination of Lemon64's comments for *The Way of the Exploding Fist*, and the review of contributions to the PMA which reveal how the collection and display of player memories provides an important resource for curators. Despite concerns regarding the insubstantial nature of these retrospective subjective encounters and anxiety around issues of veracity and nostalgia, I presented examples that demonstrate how these fragmentary memories are ideal for displaying the multiple pleasures and understandings of a game in evocative ways. As shown, player memories and recollections collected from online retro gamer sites are able to provide a wealth of detail about players' experiments and experiences within individual games. A careful

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<sup>640</sup> Newman, '(Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay'; Newman, *Best Before: Videogames, Supersession and Obsolescence*; Lowood, 'Video Capture: Machinima, Documentation, and the History of Virtual Worlds'; Lowood, 'Perfect Capture: Three Takes on Replay, Machinima and the History of Virtual Worlds.'

selection of even a small number of these memories can communicate a sense of a game as experienced to exhibition audiences. The accounts of different players' interactions help provide a rich and diverse historical record of the work. In addition to documenting the broader culture of the reception of historical games, this thesis argued that player stories can connect contemporary audiences with a sense of what made the work significant in its time. It is often only through player recollections that we learn about the larger impacts of a game or the social circumstances of playing it. The thesis advocates that player memories have significant value for game history and preservation.

#### 8.4 Exemplar for Museum Practice

In asking how to represent historical games I have established the importance of a game historiography that addresses the socio-cultural conditions of game development and consumption. For the exhibition and collection of videogames I have offered an approach that documents games "as played". Through my case studies of SSG's *Run5*, the display of *The Hobbit* and examination of the practices of selected retro gamer sites, I have demonstrated how this history may be executed. Furthermore, these methods are applied in the PMA, which presents an example that encourages users to share materials and memories of their experiences of 1980s gaming. The PMA offers a model that museums could use for the collection and display of videogames and other born digital materials that are, in part, defined by their users' actions.

In its investigation of the practices of selected retro gamer sites the thesis has shown that, in contrast to the Museum's locked and siloed information, these sites have an open approach to their collections. Some retro gamer sites source data directly from dispersed databases online to support richer content without duplication. They encourage a range of participation, from

simply 'liking' works to co-ordinating lengthy community efforts to locate games and the complex task of making copies of gamecode. Despite concerns around user-generated data, I have shown the entries on some of these specialist retro gamer sites can be more rigorous and expansive than many museum collections. Some have even produced specialised taxonomies for game classification.

These communities have also been responsible for ensuring that historical games are not something that just exist in the past, but continue to inflect game culture. In comparison to the inclusive and well thought-out practices of the retro gamer sites discussed, museums have often presented their collections online with little consideration for the quality of the information provided or who it is for. In placing content online, many museums merely replicate the factual descriptive data of collection management systems,<sup>641</sup> rather than the more engaging narrative discourses of exhibition. The PMA's approach to exhibiting a local history of Australian micro computing games of the 1980s was informed and inspired by the work of retro gamer communities.

The potential to build collection resources through collaborating online with expert communities and generous individuals with memories and artefacts to share was discussed with reference to the practices of Lemon64 and World of Spectrum and demonstrated by the PMA. Drawing on Owens, I presented online retro game communities as an extension of the expert amateurs and professionals who have traditionally shared their knowledge and skills to enrich museum collections and exhibitions.<sup>642</sup> The administrators of Lemon64 and World of Spectrum interviewed for this

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<sup>641</sup> Fiona Cameron, 'Museums Collections, Documentation, and Shifting Knowledge Paradigms' in Ross Parry (ed), *Museums in a Digital Age* (Routledge 2010).

<sup>642</sup> Owens.

research recommend that museum professionals come to them for advice, assistance and to request resources. Our experience with the PMA was that the fostering of relationships online with expert individuals and groups not only resembled those relationships formed through conventional museum practice, their expertise also enriched the collection.

The PMA model supports an ongoing, asynchronous dialogue between curators and expert communities and individuals. It encourages dialogue between differing groups and individuals capable of producing revelations unforeseen by the curators. In the case of *Jewels of Sancara*, it enabled an act of software preservation that was mutually beneficial for the game's author, the Microbee heritage community, and the ambitions of the Play it Again collection. The PMA provides a valuable model for collaboration with communities, the need for which was identified by the 'Preserving Virtual Worlds Report'. Working with curated online exhibitions, the energies of communities can be directed toward assisting museums to develop collections in line with their collection policies and institutional ambitions. The museum can also be responsive to recognising communities' game history and preservation ambitions. Retro gamer communities are pioneers in envisaging how to present born-digital artefacts online. Their sites can offer models for how to display and collect for a digital future where work will have no material form, but will need to be represented through the documentation of systems and individual experiences.<sup>643</sup>

There are many reasons to consider the possibilities of online display for this era of videogame history. These include the knowledge that museums

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<sup>643</sup> Sebastian Chan and Aaron Cope, 'Collecting the Present: Digital Code and Collections' in N Proctor and R Cherry (eds), *MW2014: Museums and the Web 2014* (Museums and the Web 2014) <<http://mw2014.museumsandtheweb.com/paper/collecting-the-present-digital-code-and-collections/>>.

cannot continue to show historical games on original hardware and that their emulation is inevitable. This means that an 'authentic experience' will not be found in an encounter with the original hardware and software. Working with orphan ware, single author, and hobbyist works provide opportunities to address and risk manage issues concerning copyright. Most player-made artefacts, player memories and other paratextual material that can inform understandings of the games are eminently suited to online display. In addition, it is known that communities interested in the history of videogames of the era are located online. Playing historical games online may also be more accessible to audiences, because of the resemblance to contemporary online gaming experiences.

Online exhibitions complement the Museum's collection and display of the material culture of videogames. This thesis recommends that exhibitions online can also develop a more open approach to collections, one that encourages and invites a range of participation and knowledge sharing by skilled and knowledgeable individuals and communities online. This proposition reflects changing ideas of curation, illustrating Proctor's proposal that in the network age curators require new skills and need to define themselves more as collaborators and brokers, than as authorities and experts.<sup>644</sup>

## 8.5 Future Work

The question of how the Museum then stores and preserves the PMA and its contributions is not addressed in this research. This somewhat ironic fact is an issue for further consideration. Currently few museums retain access to historical sites and, as discussed in Chapter 2, there are issues with the archiving of rich content sites on Pandora and the Internet

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<sup>644</sup> Proctor, 'Digital: Museum as Platform, Curator as Champion, in the Age of Social Media.'



Archive. Perhaps in the future museums will be less focused on the digitisation of collections and more concerned with the migration of digital resources to more stable archival formats.

In commencing the hitherto largely undocumented history of game development in Australia, this research represents the beginning of a more in-depth local history. Future work is required on an expanded history of the 1980s for the companies discussed, Beam Software/Melbourne House and SSG and their games. In addition, other emerging commercial Australian developers, plus the small one-person developers and homecoders need to be researched. The rise of Australian commercial sales and distribution networks for videogames and the hobbyist distribution channels are also ripe for detailed examination, as are the local magazines, communities and hobbyist clubs, all of which could yield a wealth of interesting further insights. Many new insights for this history can already be gleaned from contributions to the PMA.

The research process has identified the need to address known design issues and to further explore the PMA's potential for display. Future research will allow an opportunity to test the hypothesis regarding gameplay, following the introduction of play-in-the browser games to the PMA. There is also the potential for a wider application of online memory archives modelled on the PMA for capturing local games histories. As a research initiative, this would allow for rich comparative examination of local game cultures from the 1980s. An existing proposal is in place for comparative historical research on micro-computer users' experiences and memories between Australia and Korea in the 1980s under the auspices of Assoc. Prof Melanie Swalwell's Future Fellowship. This project is a

collaboration between Swalwell, Stuckey, and Endeavour Fellow Dr Dongwon Jo.<sup>645</sup>

Future potential projects emerging from the research include an examination of text adventure communities of writers and fans. A popular genre, text adventures dominated the pages of early computing and game magazines and hobbyists generated their own clubs, zines and help-lines. Many hobbyists used the UK-designed text adventure writing tool *Quill* (1983, Gilsoft International),<sup>646</sup> a primitive 'game engine' originally released for the ZX Spectrum that enabled people to write their own adventures without having to master coding. An investigation of the local Australian creative community of writers and adventurers compared with other international clubs has the potential to provide further understandings of the creative communities that formed around microcomputing and games of this era. The PMA format would once again be able to offer a mix of curated interviews, scholarly meditations, personal histories and thematic discussion to contextualise the collection of text adventures. However, the examination of this history would also present new curatorial questions for online display, collection, and representation of associated memories and artefacts.

The PMA model could also be used to expand into other historical periods. A proposed further study addressing Australian game history of the 1990s would present a differing set of curatorial challenges. In the 1990s, Australian companies developed for consoles owned by large

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<sup>645</sup> Dr Dongwon Jo has been the successful recipient of Endeavour Scholarships and Fellowships 2016 at the University of Flinders with Assoc. Prof Melanie Swalwell.

<sup>646</sup> *Quill* is a menu driven data system that automates the process of creating database files written by Graeme Yeandle (UK) as a tool for writing text adventure for himself and others. It was released for the Spectrum by Gilsoft in 1983. It was later realised for the BBC micro, Amstrad and Commodore 64. Jimmy Maher, 'The Quill' (*The Digital Antiquarian*, 2013) <<http://www.filfre.net/2013/07/the-quill/>>.

publishers such as Nintendo. The era also brings the complexity of PC games with their assortment of graphic cards, drivers and other interdependencies. The rise of the internet introduces online gameplay and fosters mod cultures. Whilst the 1980s retro game communities share many similar goals and methods, the fan and community archives for 1990s games have more divergent approaches. Fan communities supporting NES and Gameboy games may have little in common with the archives for the Australian-made *Quake* mod, *Team Fortress* (Team Fortress Software, 1996), and those of the popular multiplayer Sci-Fi real-time strategy *Dark Reign* by Auran (1997), whose community of fans continue to patch Auran's game to extend its life. Examination of these online community resources may provide new insights regarding display and documentation in addition to new understandings of player experiences from this era. In working with creators and fan communities of the 1990s, there would be the possibility to advance solutions to different issues of collection and display that the videogames and stories of 1990s gamer culture present.

This research offers models for how to collect for a digital future, where increasingly, cultural artefacts will have no material form but will need to be represented by an assemblage that addresses the design of their systems and the multiple experiences of their users. The curator of these works is no longer a caretaker, but will be a researcher coordinating conversations, representations and information. Whilst the museum is responsible for a culture's material heritage, it also needs to collect and display the digital past and plan for a digital future.



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